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Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 39, JULY 1975, NUMBER 7

Joel B. Singer — **Microsurgery for Amputated Index Finger** 401
Frederick Finseth, Stephen V. Flagg, Graeme C. Baker, William H. Frazier and Thomas J. Krizek — **Microsurgery in Digital Replantation** 402
Nelson A. Gelfman, Ramon N. Kranwinkel, John F. Pezzimenti, Philip I. Kotch, Lila P. Dean and Barbara Smith — **Hemodialysis for Reye's Syndrome** 405
Anthony H. Horan — **Bacteriology of Prostatitis and Infertility** 407
Joseph T. Witek, Julian Banerji and Richard P. Spencer — **Emergency Nuclear Medicine Procedures** 409
Clarence T. Sasaki and Donald Kent — **Aerotitis** 410
Hebbel E. Hoff, Bonnalie O. Campbell and Stephanie Deavers — **First Louis H. Nahum Lecture Respiratory Control of the Heartbeat** 421
Thomas Halper — **Ethics and Social Science Research** 430
J. Lowell Dixon — **Jehovah's Witnesses and Blood Transfusion** 433
Frank J. Rauscher, Jr. — **DES: Its Uses and Effects as Contraceptive and Additive** 439
House of Delegates—Annual Meeting — **Summary of Proceedings** 443
Guy W. Van Syckle — **President's Page** 415
Editorials: Irving M. Polayes — **Digital Replantation—A Fact Not a Fancy** 417
Suzanne M. Sgroi — **The Abused Child—Physicians' Obligations** 418
Letters to the Editor: D. W. Pasquariello — **Mongooses and Cobras** 418
Ira V. Hiscock — **Rocks and Shoals Impede Quality Health Care** 419

Table of Contents: page 1

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Connecticut Medicine

JULY, 1975
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CONTENTS

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scientific:

Salvage of an Amputated Index Finger Utilizing Microsurgical Techniques, *Joel B. Singer, M.D.* 401
Digital Replantation and Microsurgical Methods, *Frederick Finseth, M.D., Stephen V. Flagg, M.D., Graeme C. Baker, M.D., William H. Frazier, M.D. and Thomas J. Krizek, M.D.* 402
Reye's Syndrome Treated by Hemodialysis, *Nelson A. Gelfman, M.D., Ramon N. Kranwinkel, M.D., John F. Pezzimenti, M.D., Philip I. Kotch, M.D., Lila P. Dean, R.N., and Barbara Smith, M.T.* 405
The Bacteriology of Prostatitis and Infertility, *Anthony H. Horan, M.D.* 407
Evaluation of "Emergency" Nuclear Medicine Procedures, *Joseph T. Witek, M.D., Julian Banerji and Richard P. Spencer, M.D., Ph.D.* 409
Aerotitis, *Clarence T. Sasaki, M.D. and Donald Kent, M.D.* 410
Shigellosis Therapy, Abstract by *J. B. Weissman, M.D., E. J. Gangarosa, M.D., H. L. DuPont, M.D., J. D. Nelson, M.D. and K. L. Haltalin, M.D.* 413

editorials:

Digital Replantation—A Fact Not a Fancy 417
The Abused Child—Physicians' Obligations 418

departments:

The President's Page 415
Reflections from the Dean's Office, 416
Letters to the Editor:
D. W. Pasquariello, M.D. 418
Ira V. Hiscock, M.D. 419
From the Executive Director's Office 451
Physician Placement Service 458

special articles:

The Respiratory Control of the Heartbeat, The First Louis H. Nahum Lecture (First of two parts), *Hebbel E. Hoff, M.D., Ph.D., Bonnalie O. Campbell, Ph.D. and Stephanie Deavers, B.A.* 421
Ethics and Social Science Research, *Thomas Halper, Ph.D* 430
Jehovah's Witnesses and Blood Transfusion, *J. Lowell Dixon, M.D.* 433
DES: Its Uses and Effects as Contraceptive and Additive, *Frank J. Rauscher, Jr., Ph.D.* 439
The Influence of Tobacco Smoke on Indoor Atmosphere, *I. Schmeltz, Ph.D., D. Hoffman, Ph.D. and E. L. Wynder, M.D.*, Abstract by *Edward J. Bernacki, M.D.* 440

miscellaneous:

CSMS Annual Awards 442
Summary of Proceedings of the House of Delegates 443
Address of the President, *James H. Root, Jr., M.D.* 446
Inaugural Address of the Incoming President, *Guy W. Van Syckle, M.D.* 447
Book Reviews 452
In Memoriam 456
Woman's Auxiliary 457

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Salvage of an Amputated Index Finger Utilizing Microsurgical Techniques

Joel B. Singer, M.D.

Abstract—Modern replantation surgery began with Malt[1], in 1962, when he successfully replanted a patient's right arm. However, it was not until the development of microsurgical technique by Jacobson and Suarez[2] in 1962 that predictable survival of replanted tissues became possible. Klinert and Kasdan,[3] in 1965, reported the first successful repair of a digital artery in an amputated digit with only dorsal veins present and Kamatsu and Tomai,[4] in 1968 were the first to report successful replantation of a completely amputated thumb.

This paper will present a case report in which an amputated index finger was salvaged utilizing microsurgical techniques for the repair.

Case Report

R. K., a fifty-two year old right-handed woman, sustained an injury to the right index finger while working on her car. In the emergency room it was noted that an amputation had occurred at the level of the proximal interphalangeal joint of the right index finger. The digit was attached only by the deep flexor tendon. It appeared totally devascularized (Fig. 1). A decision to do a microvascular repair was based on the patient's desire to retain the digit because of her employment as a sewing machine operator. She was immediately brought to the operating room, where, under block anesthesia, debridement and bone shortening was performed. The PIP joint was fused with K wire fixation. Two dorsal veins, the ulnar digital artery, two digital nerves were repaired utilizing an operating microscope and 10-0 and 9-0 nylon.

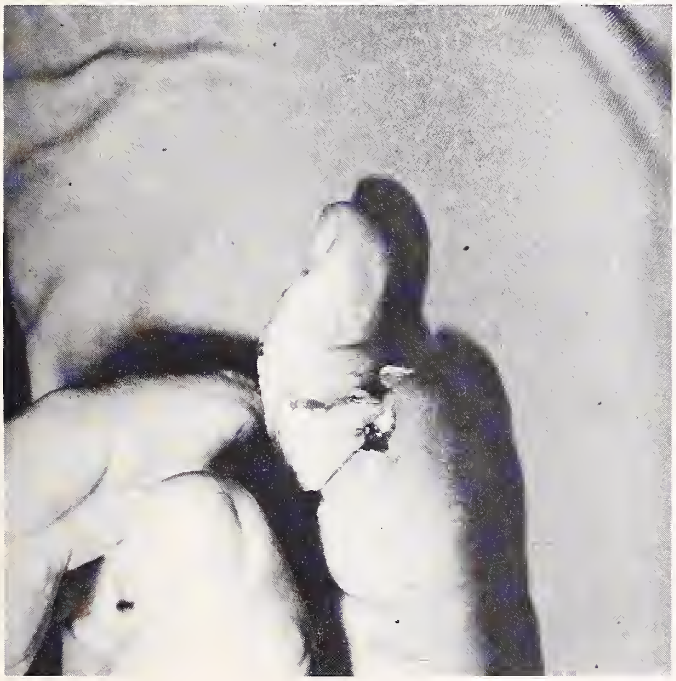

Fig. 1

Appearance of amputated digit

The digit appeared to regain normal color soon after the arterial anastomosis (Fig. 2). However, twenty-four hours later, the tip of the digit appeared to be dusky. A small skin wedge was excised and heparinized saline soaks were applied every four hours to allow free bleeding to occur into the dressing. Viability of the digit was evident seventy-two hours after the surgical procedure. The patient continued to do well and the skin was noted to be healed at four weeks after replantation. The K wire was removed at six weeks and motion was begun at this time. Return of sensation has been noted recently and function has improved slowly. (Fig. 3).

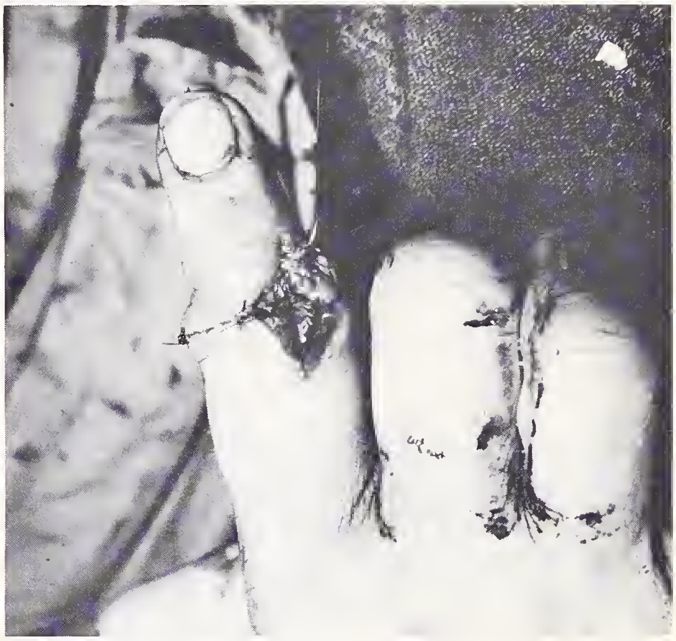

Fig. 2

Appearance of digit immediately after re-vascularization

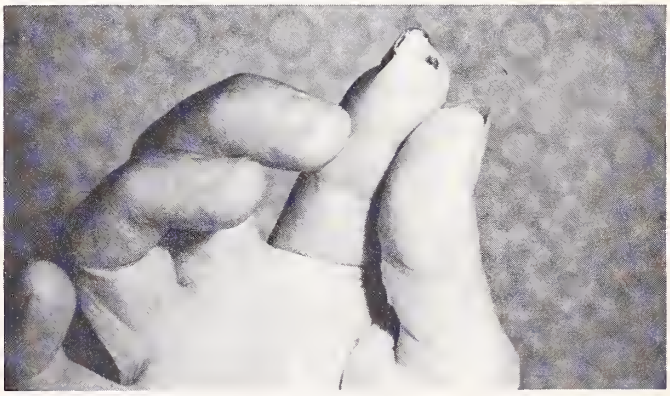

Fig. 3

Eight weeks post re-implantation

DR. JOEL B. SINGER, Assistant attending, Division of Plastic and Reconstructive Surgery, Norwalk Hospital, Norwalk, and Acting Chief of Division of Plastic Surgery, Park City Hospital, Bridgeport

Pre-operative management should be initiated by the first aid attendant, who should cool the severed digit as rapidly as possible by placing it in a clean plastic bag surrounded by another plastic bag containing ice. Preservation of digits for periods greater than twelve hours has been achieved by this method. The final decision of whether or not a severed part can be replaced should be made by surgeons who are experienced in replanting. Some digits will obviously be too damaged for salvage. In other cases inspection under the microscope is necessary before a decision can be made.

Experience has shown that bone shortening and extensive debridement are of utmost importance in the initial care of these digits. The sequence of repair should consist of skeletal fixation, extensor tendon repair, dorsal veins, dorsal skin, digital arteries, volar nerves, flexor profundus and skin repair.[8] Vascular repair utilizing the microvascular technique described by Buncke[6] in 1967 is advocated. The post-operative management includes regular observation by the resident and nursing staff for the color, warmth and capillary return of the digit. Manipulation is kept at a minimum. The use of systemic anticoagulation is controversial, however, local use of heparinized saline dressings appears to be advantageous in allowing for free bleeding and decreasing the amount of venous congestion. The excessive scar at the site of the replantation is a strong argument for primary reconstruction and, therefore, all structures are repaired initially if possible.

Discussion

The primary aim in replantation of a digit is to obtain survival. Equally important is to achieve satisfactory function. Indications for digit replantation have to be weighed in terms of the patient's particular circumstances.

Conclusions

Salvage of an amputated index finger in a fifty-two year old woman is reported and a short discussion of the technique and pre and post operative care is presented. Survival alone does not signify success in this type of surgery in that adequate and good function should also be obtained. The major role that microsurgery can play in the treatment of hand injuries is the primary repair of digital vessels, nerves and other small structures, assuring the viability of avulsed tissues and providing the ability to do finer repair leading to improved function. Certainly, microsurgery has become an important part of the armamentarium of the reconstructive hand surgeon.

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Digital Replantation and Microsurgical Methods

Frederick Finseth, M.D., Stephen V. Flagg, M.D.,
Graeme C. Baker, M.D., William H. Frazier, M.D.
and Thomas J. Krizek, M.D.

Abstract—Microsurgical replantation of a dominant index finger is presented. The expanding clinical experience, microvascular techniques, and issues of patient selection are discussed.

Introduction

The possibility of replantation has been a dream of surgeon since the very beginning of the art. In one sense, replantation of an amputated part is an ultimate reconstruction with no comparable substitute, for a complex amputated structure such as a finger, thumb, or hand.

Experience gained in recent years has converted microsurgery from the experimental laboratory to a clinical reality. This is particularly manifest in the rapidly increasing number of reports of successful digital replantation from certain centers about the world. The technical feasibility and the reported

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DR. FREDERICK FINSETH, Assistant Professor of Surgery (Plastic); DR. STEPHEN V. FLAGG, Clinical Associate of Surgery (Plastic); DR. GRAEME C. BAKER, Resident in Surgery (Plastic); DR. WILLIAM H. FRAZIER, Instructor and Chief Resident in Surgery (Plastic) and; DR. THOMAS J. KRIZEK, Professor of Surgery (Plastic); Chief, Plastic and Reconstructive Surgery; all of the Yale University School of Medicine.

This paper was read before the Connecticut Society of American Board Surgeons, December 4, 1974.

successful functional results for this type of hand injury commend this procedure for wider application, under controlled circumstances where microsurgical instruments and methods are available, such that the patient can be offered a reasonable chance of a successful outcome.

The first successful digital replantation was in 1965.[1] Since then, between three and four hundred have been performed. The American replantation team to China in 1973 observed the general successful functional results in a series of over two hundred digital replants. [2] [3] [4] O'Brien[5] of Australia has reported a series of 49 digits with a 71% survival rate; Lendvay and Owen[6] of Australia reported a series of 63 digital replantations with a 46% survival rate. There has been considerable advance in understanding the problem, gained from investigative work in several laboratories.[4] The evolution of thinking, experience, and surgical capability makes it timely to reconsider the problem of replantation and assess its proper and careful application. This enlarging experience from several centers about the world represents the justification for exploring the role of digital replantation for the injured hand.

Microsurgical Methods

Microsurgical techniques are the key to success in this type of surgery. Magnification is essential and requires a double operating microscope where both the surgeon and the assistant have access to magnification. Special instruments are mandatory and include spring-loaded needle holders and scissors, jeweler's forceps, and 10/0 nylon suture with the smallest needle. The anastomosis is accomplished at 25-40 power, whereas suture tying is carried out at 6-10 power. An experienced first assistant is extremely useful. The circumference of the vessel is trifurcated with three sutures spaced 120° apart. These stabilized portions of the vessel wall allow for the application of approximately two sutures between each of the stays. Thus, a total of 9 sutures on the average is employed. There is no cannulation of the small blood vessels which might damage the intima and compromise a result by thrombosis of the vessel. Systemic heparinization is delayed for 1 day because of the excessive bleeding coincident with its immediate use. Manipulation of the intima is avoided during the repair.

Case Report

A 47-year-old right-handed carpenter sustained a band saw guillotine amputation of the right index finger at the base of the proximal phalanx. He arrived shortly thereafter in the Emergency Room, where the amputated digit was placed on ice in Ringer's lactate solution. Associated injuries included a laceration of the radial digital nerve to the long finger and a compound comminuted fracture of the interphalangeal joint and distal phalanx of the right thumb. On consideration of the patient's type of wound, age, motivation, personality structure, occupation, and time from injury, it was elected to proceed with digital replantation involving microvascular repair. Two teams of surgeons were utilized—one for the amputated part, and the other for the hand itself. Wound cleansing and debridement was initially carried out. The phalangeal fragments were shortened to insure that repair of the blood vessels and nerves would be without tension. Bony stabilization was obtained with Kirchner wires. Two dorsal veins were identified and repaired by end-to-end anastomosis. The radial digital artery was identified, sharply debrided, the adventitia trimmed, and end-to-end anastomosis accomplished. At just under two hours, the tourniquet was released and the digit revascularized. The flexor digitorum superficialis tendon was excised. The flexor digitorum profundus tendon was primarily repaired. Both digital nerves were primarily repaired. The vascular anastomoses were bathed in magnesium sulfate solution, as this has been suggested to prevent anastomotic thrombosis in the small vessel repairs. The skin was loosely approximated with strategically placed sutures. A loose, bulky dressing was applied with a dorsal splint for immobilization. At the termination of the procedure, Dextran was given, along with aspirin and persantin. Post-operative care included frequent observations for change in the vascular status and elevation of the hand for the purpose of minimizing edema. Heparin was commenced on the first post-operative day and continued for approximately ten days. Aspirin and persantin were administered for one month.

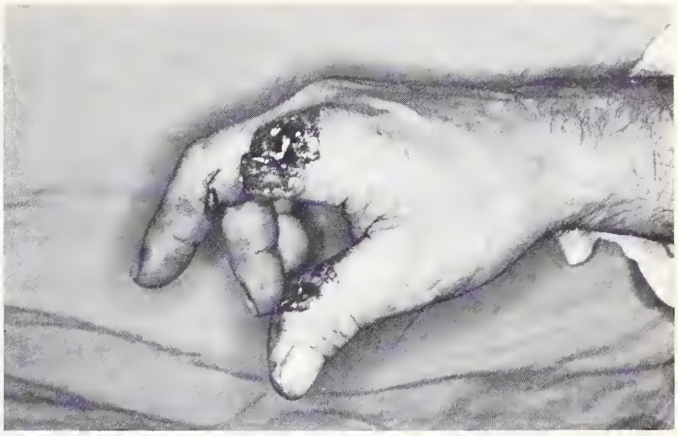

Figure 1
The injured hand

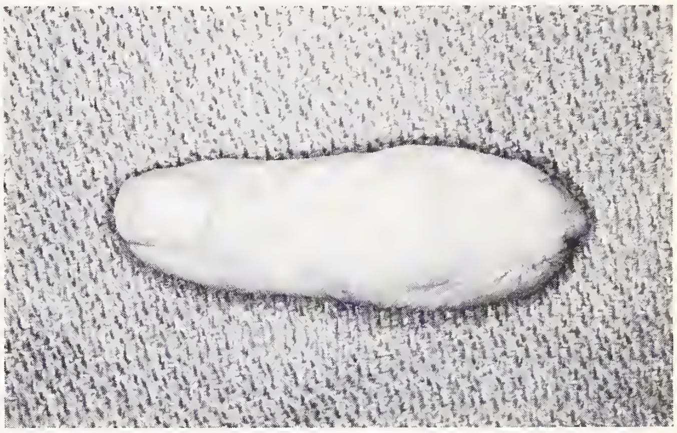

Figure 2
The amputated index finger

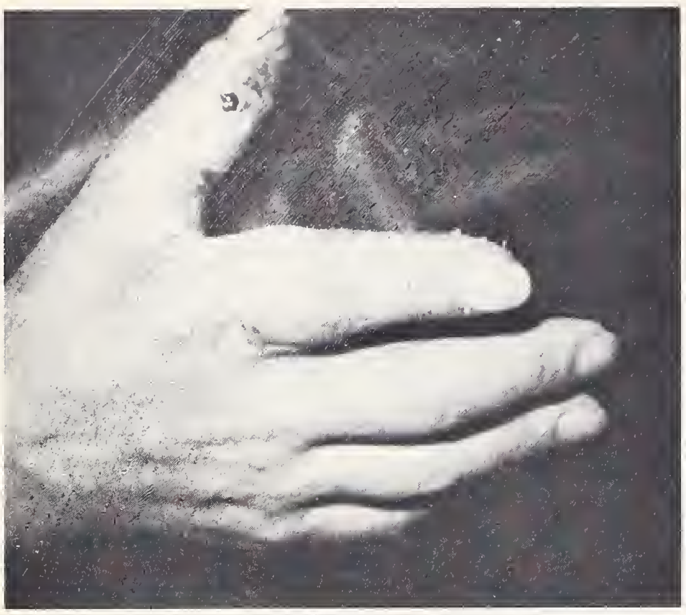

Figure 3

The replanted digit 2½ months post-operative. There is evidence of excellent sensory recovery and mobility.

Discussion

At any time, the circumstance may present at the emergency room, requiring sound and experienced judgment. Caution and reason must be applied lest we have the situation of the trimph of technique over reason. The proper selection of patients and the consideration of indications is a most critical issue. The general consensus on indications for digital replantation include multiple digital injuries and amputations of the thumb or index finger. It is not generally indicated to replant the ulnar three digits except in special circumstances. Younger people have greater regenerative properties and have a better prospect of a good functional result from replantation. Other factors must be considered, such as associated medical disease, trauma to other organ systems, hand dominance, occupation, personality structure, and the desires and motivation of the patient. The expense and time involved in such a procedure must be considered, as well as the impact on the patient's social and psychological circumstances. The type of injury also influences the selection of patients for this procedure. Avulsion injuries have been shown by several groups[4] [5] to give the least favorable results. Crushing injuries are commonly considered to be sub-optimal; however it must not be forgotten that with adequate surgical debridement, a crush injury can be converted to a sharp, surgically clean amputation. The optimal wound is a sharp, guillotine-type of amputation involving a minimal ischemia time. Successful results have been reported with ischemia time from six to eight hours; however, when the amputated part has been chilled, the ischemia time has been extended up to 24 hours.

Summary

Replantation of amputated parts of the hand is a clinical reality, and its wider application is justified, but only under controlled circumstances where a reasonable chance of success can be offered the patient. This requires microsurgical instrumentation, magnification, special methods, and a technical proficiency acquired through laboratory and clinical experience. The ultimate objective is to provide the finest reconstructive potential to patients having these complex hand injuries, with the goal that their ultimate function will be the better.

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Reye's Syndrome Treated by Hemodialysis

A Case Report

**Nelson A. Gelfman, M.D., Ramon N. Kranwinkel, M.D.,
John F. Pezzimenti, M.D., Philip I. Kotch, M.D.,
Lila P. Dean, R.N., and Barbara Smith, M.T.**

Abstract—The outbreak of Reye's Syndrome in various parts of the United States in the later winter and spring of 1974 involved many teenage children. Exchange transfusion in older children is a difficult procedure from a technical and blood procurement standpoint. A 15-year-old Caucasian female with Reye's Syndrome was treated with prolonged hemodialysis. The rapid regression of symptoms and favorable outcome suggests that this may be a useful alternative therapy particularly in the management of older and larger children. Hemodialysis clears blood more rapidly than peritoneal dialysis and is technically simpler than total body washout.

Introduction

Reye's Syndrome is an acute, highly lethal post viral encephalopathy of childhood, caused by or associated with acute, transient hepatocellular dysfunction.[1] Exchange transfusion is the most commonly employed therapeutic modality.[2] However, the outbreaks of Reye's Syndrome in late winter 1974 involved older, larger children[3] in whom exchange transfusion is technically difficult and the fresh blood requirement so large that the average blood bank is severely taxed. Prior to March of 1974 when the following case occurred, there was a single report of Reye's Syndrome treated with peritoneal dialysis.[4] Subsequently a larger experience with peritoneal dialysis has been reported from Pittsburgh.[5] The following report describes the use of hemodialysis with rapid reduction of blood ammonia and rapid reversal of encephalopathy.

Case Report

CM, a 15 year old Caucasian female, developed a mild sore throat, cough and malaise seven days before admission. There was seeming improvement on the fourth day of illness but on the fifth day nausea and uncontrollable vomiting began. Two hundred milligrams of trimethobenzamide hydrochloride were administered to her by intramuscular injection on the morning of the sixth day and later that same day she took one 15 mg. spansule of prochlorperazine for continued severe emesis. The evening of the sixth day she became disoriented and was admitted to the hospital at approximately 2 a.m.

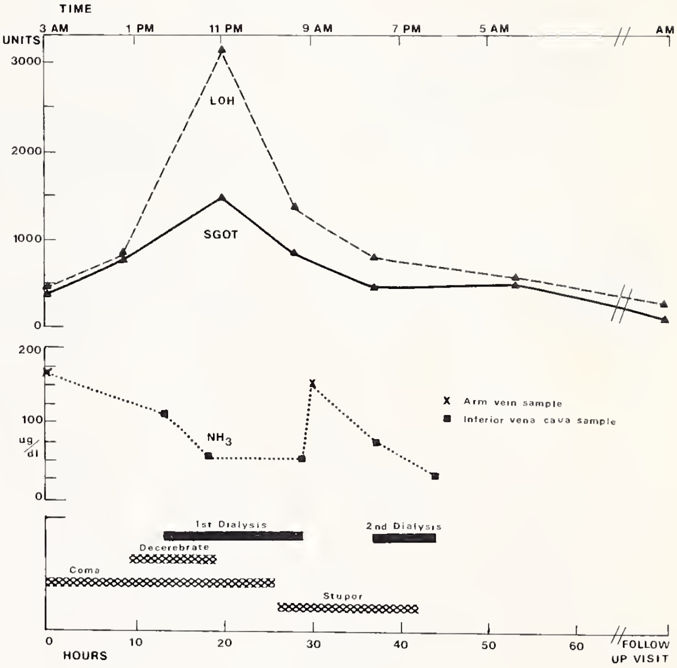

Figure 1

Temporalized graph of clinical state, dialysis and plasma chemistry.

On admission the girl was unresponsive but screamed and withdrew from painful stimuli (Huttenlocher State II[2]). Her blood pressure was 90/50, pulse 70 and respirations 20 per minute. Pupils were widely dilated but reacted to light and discs were well outlined and without papilledema. There was occasional arching of the spine, marked dystonic motor instability with biting motions and rhythmic pelvic motions, unsustained clonus in both ankles, equivocally positive Babinski bilaterally and exaggerated deep tendon reflexes. Serum transaminase and blood ammonia were elevated (Fig. 1).

By noon decerebrate posturing particularly in response to stimuli (Huttenlocher Stage III[2]), and strongly positive bilateral Babinski reflexes were evident. By 4:00 p.m. at the time hemodialysis was begun decerebrate posturing was continuous and pupils were widely dilated with sluggish asymmetric reaction to light. Respirations had become slow and shallow.

Hemodialysis
Procedure and Response

Dialysis access was by means of two Cobe femoral catheters placed together by cutdown in the right saphenous vein. One catheter extended further into the inferior vena cava than the other. A Travenol RSP

DR. NELSON A. GELFMAN, Director of Dialysis, DR. RAMON N. KRANWINKEL, Director of Blood Bank, DR. JOHN F. PEZZIMENTI, Attending in medicine, DR. PHILIP I. KOTCH, Attending in surgery, LILA P. DEAN, R.N., Dialysis Department and BARBARA SMITH, M.T., Department clinical chemistry, all of the Danbury Hospital, Danbury.

equipped with Travenol UF II coil was used throughout the first 15 hours of dialysis. An Extracorporeal Ex03 was used for the second seven hour run. Dialysate was Diasol standard 120, potassium was added to bring the bath potassium to 4 mEg/L. Low dose heparin was administered by giving an initial 2000 unit push and then infusing 300 units per hour with a Holter pump. Blood flow was maintained at 200 ml/min. with an outflow pressure that varied from 120 to 300 mmHg.

During the first eight hours of dialysis, in addition to ultrafiltration, 50 g. of mannitol and 12 mg. of dexamethazone were administered intravenously to help control cerebral edema. The serum sodium ranged from 143 to 149 mEg/L. Blood pressure was maintained with saline as needed and blood glucose was maintained around 200 mg% by means of occasional bolus injections of 50% dextrose.

During the first six hours of dialysis, decerebrate posturing persisted and there was episodic flushing and sweating. Then gradual neurologic recovery ensued. The Babinski which had been strongly positive at the start of dialysis became equivocal. There was squinting with installation of eye drops and there were episodes of coughing and slight emesis. Nine hours into dialysis the child moaned and called for her mother. Neurologic recovery was cyclical; lighter, then deeper. By the 14th hour of dialysis there was restlessness and thrashing and by the 16th hour she would nod her head when her name was called. At that point the first dialysis was discontinued. The patient remained restless and semiresponsive during the next eight hours without further improvement. Blood ammonia which had dropped to 53 ug% by the 5th hour of dialysis had risen to 150 ug% one and one-half hours after dialysis was discontinued (see Fig. 1). Because of failure to maintain improvement and in view of the one and one-half hour post dialysis blood ammonia elevation a second seven hour dialysis was performed.

At the end of the second dialysis the patient could converse in a rambling way but could not see or feel. Over the next 12 hours improvement continued with return of sight and coordination. Neurologic recovery was essentially complete 36 hours after initiation of treatment although an EEG still showed slow waves four days after the onset of symptomatic encephalopathy.

Discussion

Whether to treat and how to treat a patient with Reye's Syndrome remains a dilemna.[6] The decision to treat this teenager was based on rapid progression of neurologic and chemical parameters (Fig. 1). The choice of hemodialysis instead of exchange transfusion was influenced by the patients size, age and the presence of an anti Lewis B antibody in her serum which would have complicated acquisition of fresh blood for an exchange. We were aware of the case report describing the successful use of peritoneal dialysis in Reye's Syndrome,[4] and we knew hemodialysis would lower blood ammonia and allow good control of electrolytes, pH and blood glucose levels. It seemed likely that other substances proposed as toxins in Reye's Syndrome (i.e. amines, amino acids, short chain fatty acids and hypoglycin A-like substances)[7] might also be removed by dialysis.

Blood ammonia levels fell rapidly during hemodialysis (Fig. 1), but rose equally rapidly at the termination of the first 16 hour dialysis. When the 1½ hour post dialysis ammonia value became known and clinical improvement was not progressing a second dialysis was performed for seven additional hours. Blood drawn at the beginning of the second dialysis suggests that spontaneous improvement in blood ammonia levels had begun. Blood ammonia drawn at the end of the second dialysis was normal (33 ug/100 ml.). The fact that blood ammonia fell rapidly to borderline values during the first dialysis and rose equally rapidly after stopping dialysis suggests continuous production and removal of ammonia throughout the sixteen hour interval. By the time the second dialysis was begun liver recovery was probably sufficient to provide some removal. The second dialysis may have been superfluous. In our patient the level of blood ammonia was inconsistent with the severe neurologic involvement observed, but the duration of ammonia elevation correlated well with the rate of hepatic and cerebral recovery (Fig. 1). The administration of trimethobenzamide and prochlorperazine for vomiting prior to admission may have worsened coma.

Unlike exchange transfusion which simply clears the vascular compartment periodically, prolonged hemodialysis can control ongoing absorption of toxins from the gut during the interval of hepatocellular paralysis. During prolonged dialysis there is sufficient time for equilibration of concentrations between vascular and extravascular compartments so that these spaces would be cleared as well. Whether hemodialysis has any inherent advantages over peritoneal dialysis will probably relate to the size of the child and severity of coma. Hemodialysis clears small molecules more rapidly than peritoneal dialysis. With either modality duration of dialysis is probably important and should be maintained until hepatocellular recovery is well advanced. Either method of dialysis represents a simpler more available approach than total body washout.[8]

Acute and convalescent sera obtained from this patient manifested a sharp rise in antibody titers for Influenza virus, type B, Hong Kong strain. This is consistent with the observation that Reye's Syndrome may follow infections with that virus.[9] Perhaps the seeming recent recognition and increasing frequency of this syndrome[1] relates to recent mutations of certain viral strains such as the Hong Kong strain of Influenza type B.

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The Bacteriology of Prostatitis and Infertility

Anthony H. Horan, M.D.

Abstract—Because no contemporary description of the bacteriology of the whole human ejaculate could be found as a guide to the therapy of prostatitis and infertility, the semen of 17 infertile males, 12 patients with prostatitis and 8 patients post-vasectomy was cultured on blood and McKonkey agar. The results showed an unexpected preponderance of gram positive organisms and suggested that penicillin and its derivatives might be more useful in infertility and prostatitis than is traditionally supposed.

Introduction

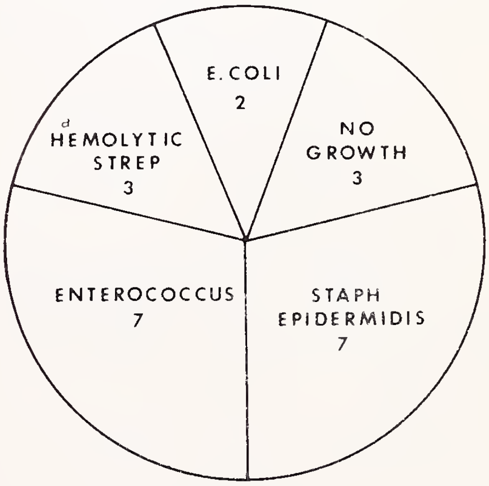
Recent studies of prostatitis have furnished descriptions of different fractions of voided human urine, searches for fastidious organisms such as T-Mycoplasma[2], and cultures of the expressate from prostatic massage.[3] However, despite this wealth of information, no contemporary description of the basic bacteriology of the whole human ejaculate could be found either in the literature or in standard texts. For this reason, as a guide to the selection of antibiotics, the present study was designed to identify the microorganisms present in the semen of infertility and prostatitis patients.

Materials and Methods

17 infertile males, 12 patients with prostatitis and 8 post-vasectomy semens were refrigerated within one hour of collection in a sterile container. The patients were un-selected, consecutive patients in a private practice of urology ages 20-50. The semen was cultured on sheep-blood agar and McKonkey agar using a loop calibrated to .001. Kerby-Bauer disc sensitivities were done.

Results

Enterococcus and Staph Epidermidis were more frequently isolated from infertile semen than alpha Hemolytic Streptococus and E. Coli as can be seen in Figure 1. Staph Epidermidis predominated in the prostatitis patients (Figure 2), while enterococcus was most common in the post-vasectomy patients (Figure 3). Since the kinds of organisms isolated in the three groups of patients appeared the same, each small series is combined in a larger series to indicate which organisms appear to prosper in the whole ejaculate (Figure 4).


Bacterial Isolates from the Semen of Infertility Couples (17)

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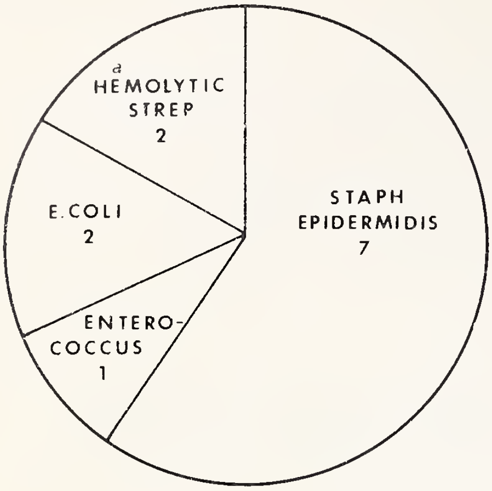
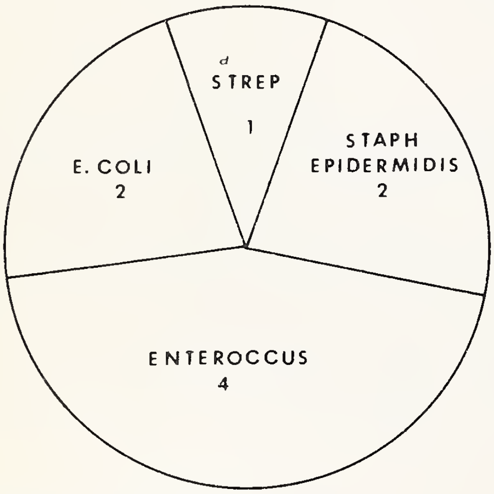
Bacterial Isolates from the Semen of 12 Prostatitis Patients

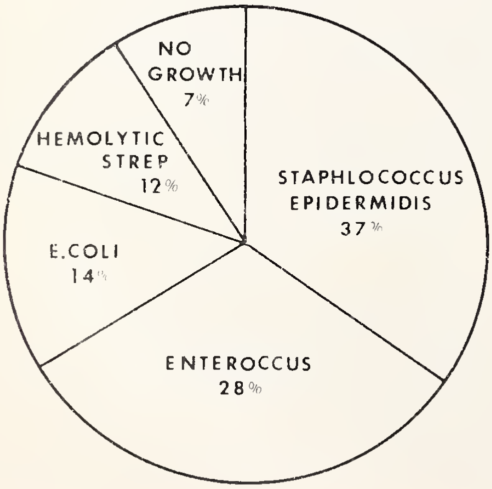


Bacterial Isolates from 8 Post Vasectomy Semen Specimens



Note: Enterococcus is usually resistant to all antibiotics except ampicillin.

Relative Frequencies of 43 Bacterial Isolates from Unselected Human Semen



Semi-quantitative results, available from 4 patients, as listed in Table I, show that concentrations of organisms in positive semens ranged from 10,000/cc to 100,000/cc.

TABLE I

Patient	*Organisms*	*Concentration*
M.S.	Steph Epidermidis	18,000/cc
	X Hemolytic Streptococci	13,000/cc
D.D.	E. Coli	13,000/cc
	E. Coli	100,000/cc
S.Y.	Enterococci	80,000/cc
	Enterococci	75,000/cc
G.K.	Enterococci	100,000/cc

The antibiotic sensitivities were extremely broad for all organisms except enterococcus, which usually was sensitive only to ampicillin.

Discussion

That the organisms cultured from the semen of consecutive urology patients were predominately gram positive, namely enterococcus and staph epidermidis, suggests that the standard treatment of prostatitis and infertility with drugs directed at gram negative organisms may be suboptimal. Since the gram positive organisms found in the whole ejaculate were sensitive to the several semi-synthetic penicillins, these bacteriocidal drugs would appear superior to the bacteriostatic group of drugs. For example, penicillin itself produced a swift apparent cure in those patients whose semen cultured alpha Hemolytic Streptococcus. There has been no recurrence in 6 months, an unusual response in prostatitis.

On the other hand, could not these organisms represent mere contamination? On this point, it is reassuring to note that the species reported here agree with those recently reported by Drach who cultured cystoscopic washings. In 153 patients he found the presumed causative organism in the following frequency: 37% Staph Epidermidis, 21% Alpha Streptococcus, 12% Diphtheroide, 8% E. Coli and 5% Enterococcus.[3] In an older study, Nichel found streptococcus in 66 of 177 cultures of prostatic secretion.[4] Of note, is the fact that he had to culture anaerobically in broth many of his streptococci before they would grow on agar. The present study may be fairly criticized for not doing the same. However, both studies confirm the finding of gram positive organisms in semen and that drugs useful against gram positive organisms should perhaps be tried first in prostatitis and infertility.

In regard to infertility, it is unclear whether these organisms are causative since post-vasectomy specimens from previously fertile males cultured the same organisms as that from infertile males. That bacteria may live in the epididymis without symptoms was obvious from their motile presence as observed under phase contrast in 34 consecutive orchiectomy specimens.[5]

Thus, it may be that contamination of genital fluid with saprophytic bacteria is a matter of degree which increases with stasis during aging of the delicate tubular structures. Clearly, the bacteriocidal nature of prostatic fluid in the dog, well documented by Stamey, does not appear to pertain to humans.[1]

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Evaluation of "Emergency" Nuclear Medicine Procedures

Joseph T. Witek, M.D., Julian Banerji and Richard P. Spencer, M.D., Ph.D.

The increased use of the procedures of Nuclear Medicine has meant that a number of these studies are requested on an emergency basis. To evaluate the types of procedures so ordered, and the overall yield (that is, the number positive), we have analyzed 100 studies ordered on weekends.

Methods

Studies ordered on Saturdays and Sundays were analyzed until 100 had been accumulated. Noted were the type of procedure, age and sex of the patient, and the interpretation of the study. Pertinent data are shown in Table 1.

Results

The bulk of the emergency studies ordered were lung scans (70%). This contrasts with lung imaging occupying only 15% of scans during the period Monday to Friday. The incidence of positive lung scans (56%) in the emergency studies was higher than that observed in cases during the entire week (about 38%).[1] The overall percentage of the emergency studies which were positive (53%) is higher than that in the regular studies, but is strongly influenced by the preponderance of lung scans.

TABLE 1

ANALYSIS OF 100 CONSECUTIVE EMERGENCY STUDIES IN NUCLEAR MEDICINE.

	Lung	*Brain*	*Renal Transplant*	*Other**
Number of cases	70	13	6	11
Percent males	36	54	50	77
Percent females	64	46	50	23
Mean age males (years)	50	46	37	39
Mean age females (years)	46	53	30	22
Percent males positive	58	43	0	87
Percent females positive	55	17	33	66

Overall percent positive = 53

*3 spleen scans, 2 liver scans, 2 pericardial scans, 2 renal studies in nontransplant patients, 1 ventilation lung study, and 1 thyroid scan.

Discussion

The availability of Nuclear Medicine Studies on an emergency basis has at least two implications. First, the ordering physician strongly suspects a disease which can be detected by these procedures (and a high incidence of positives may therefore be expected). Second, the Nuclear Medicine service indicates that it is prepared to carry out and interpret such studies on short notice at any hour of day or night. The experience we have had approximates that of Hoffer and co-workers;[2] they also concluded that emergency studies in Nuclear Medicine were justified. However, our experience extends beyond lung scans, to include other procedures on an emergency basis. For example, spleen scans have proven to be sensitive indicators of

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splenic damage after trauma.[3] It is likely that the procedures in Nuclear Medicine, being atraumatic and having a high yield, will be increasingly called upon in emergency situations.

Summary

One hundred consecutive emergency procedures in Nuclear Medicine (ordered on weekends) were analyzed. The overall number of positives was 53. The studies were heavily weighted by lung scans, which accounted for 70% of the procedures. Since these studies are atraumatic, and have an apparently high yield, they may play an important role in evaluating patients on an emergency basis.

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Aerotitis

Clarence T. Sasaki, M.D. and Donald Kent, M.D.

Abstract—There apparently has been confusion and misinformation concerning otitic barotrauma. This article attempts to clarify the mechanism of injury resulting from barotrauma to the middle and inner ear structures.

Introduction

The rising popularity of air travel and diving sports often subjects the middle ear cavities to rapid pressure changes. Failure to equalize intracavitary with ambient atmospheric pressure through the eustachian tube may produce severe ear discomfort, tinnitus, deafness, or vertigo. The following discussion attempts to define and clarify the mechanism of this injury.

Anatomy

The tympanic cavity represents an embryologic extension of the developing nasopharynx. At the completion of developmental maturation the anatomic connection between the pharynx and middle ear therefore persists as a potential tube formed of bone, cartilage, and fibrous tissue. The lateral one third or bony portion begins at the upper anterior end of the tympanic cavity and slopes anteromedially to form a narrow constriction at its junction with the cartilaginous portion which comprises its medial two thirds. The lumen of the eustachian tube is therefore narrowest at the junction of the bony and cartilaginous portions, expanding in both directions to reach its maximum diameter at the pharyngeal orifice. However, it must be remembered that the pharyngeal lumen exists as a vertical slit with its walls normally apposed. At rest, therefore, the lumen of the cartilaginous eustachian tube is closed; and the tubular connection with the middle ear remains a potential one at best, dependent on active dilatation caused by contraction of the palatopharyngeal musculature. Although the ciliated mucous membrane of the bony portion is thin, that of the pharyngeal end is thick, containing numerous mucous and lymph glands. Near the pharyngeal orifice is found a variable amount of lymphoid tissue known as Gerlach's tonsils or adenoids.

Normal Physiology

The motion of the tubal cilia and valvular action of the cartilaginous tube generally favors movement of material toward the pharynx but opposes movement toward the ear. (Fig. 1A). The cartilaginous tube is opened by contraction of the muscles of the palate and pharynx allowing any air pressure differential between tympanic cavity and the atmosphere to equalize through the nasopharynx. (Fig. 1B). This contraction of palatal and pharyngeal muscles may occur during swallowing or yawning. The passage of air out of the tympanic cavity is therefore a passive phenomenon whereas air passage into the tympanum generally requires active tubal dilatation.

It may be of interest that independent of differentials imposed by changes in atmospheric pressure, a small physiologic pressure difference between the middle ear and atmosphere normally exists. Gases within the tympanic cavity follow physical laws of equilibration and therefore normally pass from the cavity into the blood stream via the vascularized mucosa of the middle ear much as gas exchange would occur in pulmonary alveoli. If the eustachian tube remains closed, gas in the rigid cavity will be absorbed at a rate governed by the state of the mucous membrane and its gas absorption area, producing constant negative tympanic pressure. Under normal conditions, however, this pressure dif-

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ferential is relieved by daily repetitive involuntary swallowing.

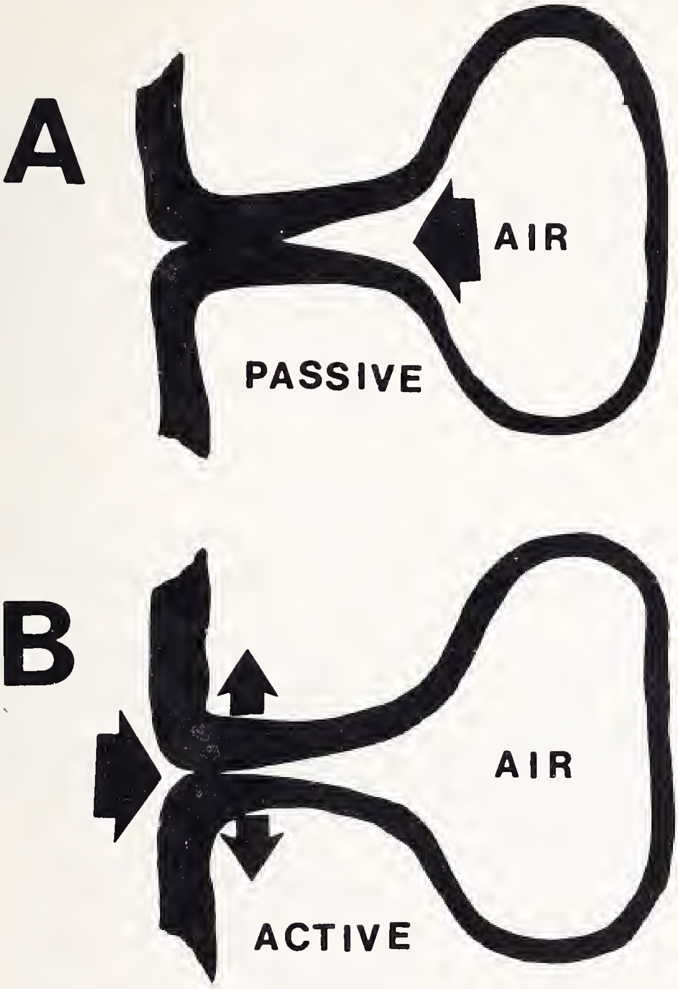

Figure 1

The passage of air out of the tympanic cavity is a passive phenomenon whereas air passage into the cavity requires active tubal dilatation.

Special Physiology

When ambient air pressure decreases as might occur with rapid ascent during air travel or ascent while scuba diving, relative middle ear pressure increases to a point necessary to overcome the valvular effect of the eustachian tube. In most instances when tympanic exceeds ambient pressure by 15mm Hg. just enough tympanic air escapes through the eustachian tube for pressure equalization.[1] This equalization process is then repeated as ambient pressure continues to decrease. (Fig. 1A).

However, when ambient pressure increases relative to tympanic pressure the mechanical effect of this differential works to close, not open the eustachian valve. This is not uncommon during flight descent or descent while scuba diving. The valve must then be actively opened by action of its muscles to afford entrance of nasopharyngeal air necessary for pressure equalization. (Fig. 1B).

Haines and Harris[2] clearly describe a sense of ear fullness at a pressure difference of 3-5mm Hg. At 15-30mm Hg. discomfort is experienced. Excesses of 30mm Hg. pressure differential may cause pain, tinnitus, or vertigo. At ambient pressures 80-90mm Hg. above tympanic a "locking" phenomenon occurs whereby the walls of the eustachian tube become so tightly apposed that no amount of muscular contraction is able to effect tubal dilatation. Clearly, therefore, significant barotrauma to air travelers is most likely to occur during descent and not ascent.

Pathology

A series of histo-pathologic events then occurs.[3] Early there will be injection of the superior portion of the ear drum and along the malleus handle. The tympanic membrane will be severely retracted and medially displaced against the inner ear. As further evidence of vascular rupture, the tympanic membrane may appear fiery red or may itself actually rupture. Extensive submucosal bleeding and transudation of serum may give the ear drum a purple or black appearance. Consequently, decreased auditory acuity results (conductive hearing loss).

Most serious injury to the auditory system may however occur in the following way. Under these conditions if forceful autoinflation (modified valsalva maneuver) is attempted, sudden lateral tympanic membrane movement from a position of static medial displacement may result in micro ruptures of the oval and round windows. Serious damage to the inner ear produced in this way may be reflected in sound distortion (progressive sensory hearing loss) and disabling vertigo.[4] (Fig. 2).

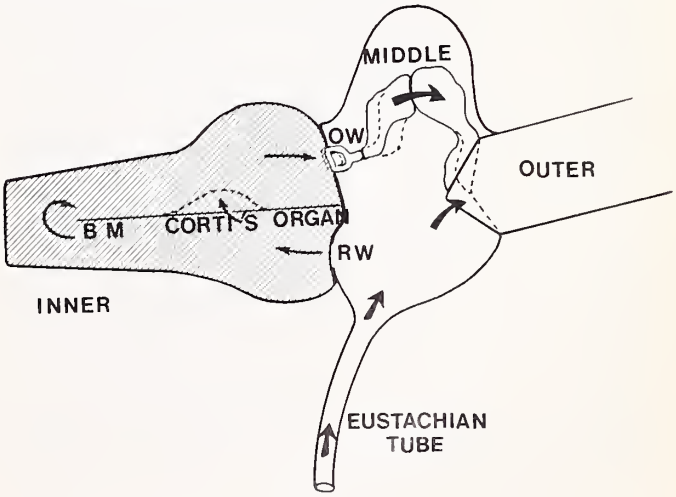

Figure 2

Forceful autoinflation causing sudden, large amplitude lateral tympanic membrane displacement may produce bottle-cork injury at the oval window (OW). As non compressible inner ear fluid moves in the direction of the oval window, round window (RW) rupture may also occur resulting in additional perilymph loss. Furthermore, large amplitude force transmitted across the basilar membrane (BM) could disrupt Corti's organ.

Treatment and Prevention

The initial management of tympanic mucosal injury, in my opinion, is purely supportive. Analgesics and decongestants may suffice in relieving pain and reestablishing eustachian function. In the case of a "locked" eustachian tube, reduction of ambient pressure is necessary to "unlock" the valve, an opportunity not ordinarily available to most air travelers. Systemic antibiotics may be necessary to suppress bacterial growth in the middle ear serous effusion. Long term serous accumulation (three weeks) resulting from a "locked" eustachian tube may require myringotomy for purposes of pressure equalization across the intact ear drum.

In general, ear drum ruptures should be kept dry and treated expectantly. Early efforts to remove debris from the ear canal by syringing are to be avoided for fear of washing contaminated outer ear contents through the tympanic membrane perforation into the middle ear. The vigorous use of topical anesthetics to a ruptured ear drum for relief of pain could result in passage of the drug into the inner ear resulting in vertigo and sensory deafness. Likewise, Neomycin-containing eardrops should be avoided acutely for fear of its entry through the tympanic membrane perforation into the inner ear. The effects of Neomycin ototoxicity are also well known.

On the other hand, injury to the inner ear mechanism, evidenced by sensory hearing loss, and vertigo, should be treated surgically as early as possible. Progressive deterioration in cochlear or vestibular function from a persistent perilymph fistula will result in progressive deafness and permanent disequilibrium. Furthermore, fistula-related bacterial labyrinthitis could precede contamination of the cerebrospinal fluid through the cochlear aqueduct resulting in life-threatening meningitis. Therefore, while the treatment of middle ear barotrauma is expectant and supportive, inner ear damage mandates early surgical exploration and fistula repair.

It would therefore seem reasonable to avoid rapid changes in atmospheric pressure for those who are suffering from temporary or permanent eustachian tube incompetence. In general, gentle middle ear autoinflation at atmospheric pressure is a reasonable test of eustachian function. Failure to autoinflate is reason to delay air flight. Any acute inflammatory processes that would cause swelling of the eustachian tube orifice should therefore be treated prior to air travel or scuba diving. The use of systemic antihistamine-decongestants for upper respiratory infections or allergic rhinitis may be of some benefit. Topical decongestants in the form of nose drops and sprays usually provide little improvement in eustachian tube function but may help in selected patients.

If in the face of eustachian tube dysfunction air flight must be performed emergently, the following additional precautions should be observed. During descent frequent swallowing is preferable to occasional swallows in order to avoid accumulation of large pressure differentials and possible "locking" of the eustachian tube. Similarly, air travelers should be awakened prior to descent in order to carry out the voluntary act of repetitive swallowing.

Summary

Aerotitis consists of traumatic inflammation to middle and inner ear structures caused by eustachian tubal insufficiency. The inability to equalize tympanic with atmospheric pressure during air travel descent may cause submucosal hemorrhage or even tympanic membrane rupture. Forced autoinflation during descent is to be avoided since sudden large amplitude displacement of the ear drum may cause inner ear rupture and loss of perilymph at the oval and round windows. While the treatment of middle ear barotrauma is expectant, inner ear injury requires immediate surgical exploration and fistula repair. Since medical management of aerotitis is slow and often ineffective, prevention of injury is stressed by avoidance of air travel or scuba diving during periods of eustachian tube blockage.

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Shigellosis Therapy

Abstract by:

**J.B. Weissman, M.D., E.J. Gangarosa, M.D., H.L. DuPont, M.D.,
J.D. Nelson, M.D., and K.L. Haltalin, M.D.**

Opinions differ on the most appropriate course of therapy for shigellosis because of conflicting evidence in the literature concerning the efficacy and possible hazards of specific antibiotic therapy. Proponents of specific chemotherapy note that the efficacy of antimicrobial agents in shigellosis is well established.[1] Moreover, several studies have shown that antibiotics will notably decrease the excretion of shigellae in the stools and abbreviate the clinical course of both mild and severe disease.[2,3] Those opposed to specific therapy argue that except in certain special cases the disease is self-limited and usually mild, that strains have repeatedly emerged resistant to whatever antibiotic happened to be in vogue at the time, and that this resistance has frequently been R factor-mediated, resulting in organisms resistant to multiple antibiotics.[4]

The clinician responsible for deciding whether to prescribe or withhold antimicrobial therapy in an individual case (Table 1) must consider the following:

1. Does the clinical status of the patient warrant specific therapy? Severe or uncomfortably symptomatic shigellosis requires therapy.
2. Would withholding antibiotics substantially increase the likelihood of secondary spread? An excretor in a household where personal hygiene is unsatisfactory is likely to be the source of intrafamilial spread. Small children, food handlers (including mothers), and residents of custodial institutions are likely to transmit disease while they are excreting the organisms.
3. Is the patient's isolate sensitive to safe and effective antibiotics? If the organism is multiply resistant, the patient should not be treated if the morbidity from the use of the only available drugs might likely exceed the morbidity of the disease.
4. Would the treatment of an individual patient constitute a considerable public health risk by increasing the selective pressure for the emergence of resistant shigellae in the public at large? After exposure to antibiotics, shigellae can rapidly acquire R factors from normal gut flora and become resistant to antibiotic.[5] Cases have been reported in which antibiotic treatment of a sensitive gram-negative pathogen was followed by multiple drug resistance by the organism.[6]

Table 1

GUIDELINES TO CHEMOTHERAPY FOR SHIGELLOSIS

Clinical Status of Patient	*Shigella Sensitivity to Antimicrobial*	*Sanitary Control*	
		Feasible	*Not Feasible*
Severe disease (patient hospitalized)	Sensitive	Treat	Treat
	Resistant*	Treat	Treat
Moderate to mild disease	Sensitive	Treat	Treat
	Resistant*	Probably treat	Treat
Asymptomatic infection	Sensitive	Possibly treat	Treat
	Resistant*	No therapy	Possibly treat

*Resistant to ampicillin and tetracycline.

A decision to treat should be followed by the choice of the most efficacious antibiotic with the least potential toxicity. Ampicillin is currently the drug of choice for shigellosis, although resistance is becoming widespread. Two new drugs, one, a combination of trimethoprim and sulfamethoxazole, and the other, oxalinic acid, have shown promise in experimental studies, but they have not been approved for general use in treating shigellosis. Tetracycline and sulfonamides have been used with success, but, as with ampicillin, widespread resistance of shigellae to these and other drugs makes it advisable to test any shigella isolate for antibiotic sensitivities. A further consideration is that certain drugs that appear sensitive *in vitro* may not be effective *in vivo*, notably non-absorbable antibiotics administered orally, such as neomycin sulfate and kanamycin sulfate. In general, if the patient is not severely ill and if continued excretion of shigellae would not constitute a major public health hazard, specific therapy should be withheld pending results of antimicrobial sensitivity testing.

The following examples illustrate ways in which the guidelines in Table 1 may be applied to specific cases:

Hypothetical Cases

Case 1—A 6-year-old boy is hospitalized with fever, bloody diarrhea, and seizures. *Shigella sonnei*, resistant to ampicillin, tetracycline, and sulfonamides, is cultured from a rectal swab specimen obtained on admission.

Decision—Treatment with the least toxic available drug is indicated, despite multiple antibiotic resistance; chloramphenicol would be a good choice. The child is seriously ill and despite

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Abstract of "Shigellosis: To Treat or Not to Treat?" DRS. J. B. WEISSMAN, E. J. GANGAROSA, H. L. DuPONT, J. D. NELSON, and K. L. HALTALIN, JAMA 229 (9): 1215-16.

precautions taken against fecal transmission of the organism may transmit infection to other patients.

Case 2—A 32-year-old male business executive develops mild diarrhea while traveling abroad. Stool cultures are obtained from the patient and his family when they return home. He and his 8-year-old daughter (who is not ill) have positive cultures for *S. sonnei.*

Decision—If the father remains symptomatic, treatment with ampicillin should be started, pending culture results. Discontinue therapy if the organism proves to be resistant to several antibiotics. Since there are no other children at home and the daughter is old enough to maintain satisfactory hygienic practices at home, withhold treatment from her until her antibiogram discloses a sensitive organism, consider therapy, particularly if she becomes symptomatic.

Case 3—A 26-year-old woman, the mother of 4 children, complains of fever and abdominal pain. Her 5-year-old son, who attends a day-care center, has been at home for 2 days because of diarrhea. His infant sister and a 2-year-old sibling are both well. The stools of the mother and the 5-year-old boy are cultured. The mother's culture is positive for *S. sonnei* resistant only to tetracycline; the son's culture is negative.

Decision—Treat the mother and her son with ampicillin; obtain cultures from the asymptomatic children and treat them if cultures are positive. Adequate sanitary control is difficult to achieve in this household, and shigellosis in the infant might be especially serious. By far the most likely source of introduction of the infection, from an epidemiologic point of view, is the 5-year-old; he should be regarded as a carrier of the same Shigella strain as his mother, despite his 1 negative culture.

Comment

It is not possible to formulate any blanket rule on therapy that is universally applicable at all times. The clinician, therefore, must decide between alternatives, and in making this judgement must take into account the clinical status of his patient, the drug resistance of the organism, and his patient's social and physical environment.

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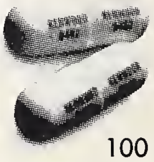

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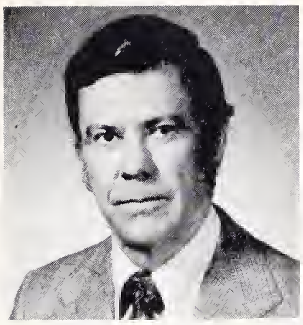
The President's Page



The national debate over medical care continues unabated with demands for heroic solutions emanating from consumer and planner alike.

While the potential for significant reform is great, the actual parameters for change are sharply limited. The medical care complex operates in a very crowded arena with many players—patients, physicians, hospitals and their workers, third party payors, etc. Not only is there no overall control or supervision but these autonomous groups carry on their activities with little or no regard for the legitimate concerns of the others! While it is true that adaptations such as the evolution of the Emergency Room into a Primary Care Center are possible, it is still difficult to see how any true reform can occur without jeopardizing this precariously balanced system.

To support this thesis, I cite the inordinate delay in the institution of a National Health Insurance program. This is a politically popular issue supported by our presidents and both parties. Despite this, a national health bill has failed to reach the House floor, much less leave it with House approval. What is at issue goes beyond politics, committee jealousies, and differences in political philosophy—at the very heart of health reform is economics.

National Health Insurance would do more than guarantee health care as a right. It would impose national health standards on what is one of the largest industries in the country. Imposition of these standards would have significant impact on the economy as a whole.

The Social Security Administration estimates that we will spend $115 billion in the next year beginning July 1, 1975. This represents almost 8% of the Gross National Product. Only the construction and banking industries together with the combined wholesale - retail trade spend more. While only education employs more people, in many of our cities, the hospitals are the largest employers.

What might happen if controls on spending are placed on an industry this large? First of all, some of our hospitals will close. National implementation of the PSRO regulations will result in increased cost to the institution per patient day. Already, administrators are talking, not about financial crises, but possible bankruptcy if per diem reimbursement policies are not changed. Any NHI program will undoubtedly cover outpatient costs preferentially to discourage hospitalizations. This will only exaggerate the fiscal problems.

The closing of hospitals will also have far reaching social and economic ramifications. This will end the benefits that have accrued since the sixties when health services were linked to jobs for the poor and unemployed through the Poverty Program. These neighborhood health centers have increased the earning power of these unskilled workers and increased the actual numbers of dollars spent in the inner city and rural areas. These people are employed primarily as orderlies, maids, and dishwashers—the "hotel workers." When and if these institutions close, they will not be able to make the lateral and vertical transfers available to skilled health care professionals. As these people lose their jobs, we can predict strong opposition from community groups who want to keep these services and dollars in the community, and from the unions protecting their new members' employment. Whereas fewer dollars will be spent for health care, there may well be an increase in overall Federal dollars spent for welfare and unemployment insurance. Streamlining health care costs will cost not only jobs but pride. How does one measure the human cost of forcing those citizens, now supporting themselves, back to assuming the role of a community charge?

The medical reform issue is—as any elementary civics course teaches—not only political, but social and economic as well.

Guy W. Van Syckle, M.D.
President

Reflections from the Dean's Office

Robert U. Massey, M.D.

Commencement 1975 is over and all the paraphernalia used to mark the ending of another academic year have been stowed away in the sure and certain hope that the annual cycle will recur, imperceptibly changed. There is comfort in this in a world where the rate of change has become almost unbearable, and the laws of the system seem to have taken on a fateful quality subject to no control but that of their own nature.

The oratory this year was mostly traditional, although references to George Orwell's *Nineteen Eighty-Four* seemed more frequent. We are well into the final decade before that year which has taken on a kind of apocalyptic quality. The commencement orators were generally wise enough to know that someone had always been calling doom and that it was in bad taste to talk of endings when the occasion was a beginning. Nonetheless the anxiety was insistent, and the conviction that the western world had been in deepening trouble since the beginning of this century could not be denied. Through all of the talk about the world belonging to the young graduates and the future theirs to invent, there were ominous allusions to a general trouble for which no remedy had been found.

The end of an era is a sad time. Huizinga describes the world of the fifteenth century as a time of gloom. He says:

> "At the close of the Middle Ages, a sombre melancholy weighs on people's souls. Whether we read a chronicle, a poem, a sermon, a legal document even, the same impression of immense sadness is produced by them all."

Admitting that "the sum of happiness can hardly have changed from one period to another," he adds:

> "But in the fifteenth century, as in the epoch of romanticism, it was, so to say, bad form to praise the world and life openly. It was fashionable to see only its suffering and misery, to discover everywhere signs of decadence and of the near end—in short, to condemn the times or to despise them."[1]

Anthropologists working over the recent finds from Lake Rudolph in Kenya have pushed human beginnings further into the Tertiary Era, so that the time of conscious, remembered history may extend over no more than 0.2 percent of the period since genus *Homo* first appeared. Reduced to the span of a single human life, that comes to about 50 days. While civilizations have seemed to spring from nothing and to disappear without a trace, there has in fact been an almost uninterrupted development of culture for 6000 years. What appear to be cycles may only be steps, like changes in administration. The real work of man proceeds in spite of social movements and changing fashions.

Sir Thomas Browne, author of *Religio Medici* and physician of Norwich, lived through one of the most tumultuous periods in England's history. Revolution, regicide, dictatorship, and restoration of the monarchy—all occurred during Browne's life as physician, naturalist, writer, devoted husband, and beloved father. His life and works show almost no perturbation from the storms outside; his knighthood, bestowed after the Restoration, proves that he had been involved.

There are other examples of intellectual work and decent life proceeding almost uninterrupted, perhaps even assisted, during the troubled transition from one epoch to the next. Certainly some periods of history have been remarkably productive of philosophy, science, and art; others, remarkable in their dullness. The world of *Nineteen Eighty-Four* had not only the quality of dull grayness, but had discovered that a language, Newspeak, could be devised that would guarantee the permanence of English Socialism, or Ingsoc. Newspeak, by denying the possibility of heretical thought, would, its inventors believed, stop history.

It would be helpful to know where we are in history, and someday we may understand enough about the laws of this complex system to derive the answer. Meanwhile close attention to the mastery of our art or science and the steadfast defense of freedom against governments, ideologues, demagogues, and fools will assure that George Orwell's prophetic novel of 26 years ago remains only a warning and that there will be a Commencement in the Spring of 1985.

ROBERT U. MASSEY, M.D., Dean and Professor of Medicine, University of Connecticut, School of Medicine, Farmington.

[1] Huizinga, *The Waning of the Middle Ages,* New York, Doubleday, 1956, page 150.

Editorials

Digital Replantation—A Fact Not a Fancy

Ten years ago, the Chinese medical literature reported the first successful replantation of an amputated thumb. From 1966 to 1968 the same source reported 24 successful replantations out of 34 reattachments of completely amputated digits. This was then followed by reports from China of more than 200 successful digital replantations having good recovery of function and sensation. Successful digital replantations have since been reported from around the world and more extensively in the Australian literature; though the number of functional results was much less than that reported by the Chinese. There have been some limb and digital replantations in Connecticut, but none have been reported with follow up data in the medical literature.

The two cases describing replantation of an amputated single digit in this issue of the *Connecticut Medicine* should serve as a stimulus for continuing efforts in this direction. Perhaps other medical centers throughout this state have also had digital replantation experience but have not reported these cases. It would be of benefit to all of us concerned with the problem of digital and limb replantation to share the knowledge gained from each replantation success or failure. We should also have documented, long-term, follow-up reports of all successful digital replantations.

The question of whether to reattach the amputated digit or perform some other surgical procedure must be dealt with by both patient and surgeon in terms of reality. Not every amputated digit can or should be reattached, and not every medical facility has the equipment and skilled surgeons to perform this procedure and follow up on it successfully. The patient must consider the time lost from work, the loss of income during convalescence, the expenses involved, the possible failure or lack of function in the reattached digit, as well as alternative methods of treatment in view of personal needs and occupation.

There are contentions by many physicians that digital replantation is more of a liability than an asset because of functional and sensory deficits in the reattached segment. The well documented case reports in the world literature do not agree with this view. A viable reattached digit even with some functional deficits is preferable to an amputation stump in selected cases. Then too, a reattached viable digit having poor function can always be amputated at the patient's request, but I wonder how many patients would request this amputation!! The time has come when we must all consider digital replantation as a fact—not a fancy.

Guide lines developed from the digital replantation experience of others serve as a means for selecting those cases having the best chances for success. Consideration is given to the type of amputation (viz: guillotine, moderate crush or avulsion) in terms of prognosis for success. Priorities for digital replantation have been assigned to attachment of single thumb or index finger amputations and in cases of multiple digit amputations on any one hand. Using these guidelines as well as the age and health of the patient, triage of these patients can be performed. The time element between injury and digital reattachment must then be taken into account. The amputated ischemic digit can be wrapped in a sterile gauze sponge moistened with normal saline, placed in a plastic bag cooled by ice (not frozen) and thereby extend the ischemia time from eight to twenty hours. This then allows sufficient time for transportation of the patient with his amputated digit from any point in Connecticut to the nearest medical facility having a replantation service.

Surgical expertise in microvascular and microneural anastomosis appears to be a basic ingredient for successful digital replantation. Some surgeons have reported good results using loupes; however, most reports favor the operating microscope in digital replantation. This would indicate that digital replantation should be performed where the advantages of good equipment and skilled surgeons are available. The problems of digital replantation can best be solved by a replantation team handling an adequate case load in a center providing for long-term follow-up.

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& Reconstructive Surgery,
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The Abused Child—Physicians' Obligations

In Connecticut, physicians are not only required to report all suspected cases of child abuse to Protective Services, but the law makes physicians subject to a $500 fine for failure to report such cases. It does not require that "maltreatment, malnutrition, sexual molestation, deprivation of necessities, or cruel punishment" be proven. It is enough if there is "reasonable cause to suspect" that it may have occurred. The law guarantees immunity from civil or criminal liability to anyone who, in good faith, reports suspected child abuse.

Parents tend to seek medical attention for the sequelae of abuse in their children and many of the cases are treated and reported from hospital emergency rooms. Nevertheless, one would expect a proportionately larger number of reports from physicians. They should be aware that they cannot stop with a diagnosis, or with "suspecting."

The Child Abuse Care-Line (1-800-842-2288) is a toll-free, twenty-four hour "hot line" maintained by the Connecticut Child Welfare Association, a statewide citizens' organization to help children. While it is not an official reporting service, it stands ready to assist in filing a report.

A physician may use the Central Child Abuse Registry available on a 24-hour basis, by calling Middletown, 347-8501. He may learn if a report on a given child has been filed before. The answer is given by a call-back system to protect confidentiality and insure that the caller is a mandated reporter.

Sexual abuse is not a popular diagnosis, yet the responsibility for its detection rests squarely on the physician. He must be alert to signs of sexual molestation during routine physicals, even when the chief complaint is unrelated. Few physicians look for or recognize the signs of gonorrhea in young children. This not only requires a high index of suspicion but also a willingness to entertain such a diagnosis. With the exception of congenital syphilis and ophthalmia neonatorum, the presence of gonorrhea or syphilis in a child, obligates the practitioner to suspect sexual molestation until proven otherwise.

In the past, there has been some concern about violation of confidentiality by sharing a report of venereal disease in a child with the agency mandated to investigate it. Connecticut has taken an important step by clarifying this issue in its statutes. According to the new law, all venereal diseases in children under thirteen years of age must be reported to Protective Services as well as to the State Health Department. In this way a two-pronged investigation may, if necessary, initiate steps to protect the child from further sexual molestation while public health authorities do treatment and contact investigation.

In addition to continuing education on the clinical aspects of child neglect, physicians should be familiar with the reporting procedures. Responsibility for Protective Services was transferred from the Welfare Department to the Department of Children and Youth Services effective October 1974. This will remove the stigma of "welfare" and provide for a more appropriate management of the baffling problem of child neglect.

Suzanne M. Sgroi, M.D.

Health Director,
Connecticut Child Welfare Association, Inc.,
Hartford.

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

MONGOOSES AND COBRAS

To the Editor: A mongoose spelled Anglem and a cobra spelled Crile had an interesting duel at the recent State Medical Society Meeting. It was an open warfare, no punches pulled duel. Dr. Anglem spoke his mind without any apologies, called a spade a spade. He said Dr. Crile's reports and findings were "conveniently favorable" to say the least. Dr. Anglem spoke so loud and clear on Dr. Crile's entire presentation that there were raised eyebrows and knowing looks hop-scotching through the auditorium. Dr. Crile was disturbed enough to show it and did get to the point of threatening to leave the assembly.

The entire brouhaha did finally end with a limp handshake and sickly smiles, but it was beautiful!! We enjoyed it. It was magnificent to see the high and mighty knock heads together. It was magnificent to hear embarrassing questions asked. And not answered satisfactorily!! We have always felt that the "publish or perish" dictum of academia should not be. It is unfair to the academician and downright dangerous to medicine. We wish that it would spread and infect more medical meetings. We did not see any colleagues at the Anglem-Crile fracas dozing off!!

For those to whom the above reads strange, shame on you for not attending the Connecticut State Society symposium, May 1st at the Hartford Hilton.

George Crile, Jr. referred to as the cobra is Emeritus Consultant at the Cleveland Clinic. He spoke and showed his results in Breast Cancer therapy. Thomas J. Anglem referred to as the mongoose, is Associate Clinical Professor of Surgery at Boston University School of Medicine. He followed Dr. Crile on the podium and proceeded to run through Dr. Crile's records like a paper shredder.

For Anglem, the Crile records were ill conceived, ill kept, ill assorted, ill matched, ill chosen, ill supported, ill worded, ill written and finally ill smelling.

So again, shame on you. You missed an interesting afternoon to say the least!!

D. W. Pasquariello, M.D., Editor, Bulletin

Connecticut Academy of Family Physicians

ROCKS AND SHOALS IMPEDE QUALITY HEALTH CARE

To the Editor: A priority goal, desired by "providers" and expected by "consumers," is the achievement of equal access to quality health care at a reasonable cost, for everyone, with emphasis on preventive educational measures. But responses, by over thirty leaders in various walks of life in New England, to an invitation for a one-sentence priority, revealed many barriers of various kinds, with stress, and disappointment. How, where and when are linked with why, what and who in the achievement of progress with understanding and encouragement. Most responses, fortunately, reveal appreciation of the bright side of America, too.

Gaps in the battle line are numerous even though the United States' expenditures for "Health" are nearly 8 per cent of its gross national product, and compare with those for national defense. Problems are human and social as well as economic. What kind of health care system can we have? "What is sick about the health care business?" (*New York Times* cartoon) What kind of society do we want to build for our children and grandchildren?

Communication weaknesses lead the complaints; between agencies, between people, including professional people, secretaries, patients, families and others who are involved. Have we the time; or do we take the time to insure understanding, the why and the how, for all concerned? Able and dedicated volunteers are scarce at this time when they are more needed than ever. How to secure transportation from here to there, on time or at all, when taxi cabs, friends, buses, private automobiles, are only a partial answer and the unnecessarily-siren-screaming-ambulances are not required! Who develops health policy? Is is coherent, practical, federal, local, timely?

More individualized: A banker emphasizes the necessity for better communications between health related agencies, doctors, hospitals, continuing care facilities, nursing homes, nursing associations, social workers and teachers for the benefit of patients. A mother of a Rabbi (priest) was told during her last days that money for an important medicine had been cut off for people on social security. A university assistant was questioned about "Who shall we bill?" while trying to make a medical appointment for her father-in-law of age 90. A newspaper columnist noted that "because of rapidly rising costs and increasingly complex treatment, certain health care services may have to be *rationed* in the not far distant future." A psychologist chief in a school program stated that "psychiatric care for children is completely inadequate." A welfare administrator referred to "a gap in systems" for a society of informed and knowledgeable individuals on matters of nutrition and of normal health.

Headlines illustrated others: Why smallpox outbreak in London? Why typhoid in New Haven? Wheel chairs lack modern design, space to clear doors, ramps to libraries, churches, museums, other public places. Fire escapes inflammable, as are bed jackets. Collective responsibility for environment, housing, slums. Self medication—whose interest? Guidelines complicated: management pre-occupation, Evaluation; Criteria; implementation gaps. Ineffective or cumbersome "marketing of health service." Remoteness of too many professionally trained men and women and institutions. On and on, without a mention of personalities, temperaments, patience, and TLC!

We may rejoice that Connecticut's landscape is old and beautiful; and that its joints are still flexible. Priority goals assembled simultaneously with these shoals give hope and faith for tomorrow's planning and will be reported later.

IRA VAUGHAN HISCOCK, M.D., M.P.H., SC.D.

Emeritus Professor of Public Health, Yale University.

A Third Faculty for Medical Schools

American medicine today holds an unprecedented mandate from the society it serves—to deliver its full capability, to all people, at all times. Implicit in the mandate is a responsibility for the continuing appraisal of the things in medicine, which affect, for good or bad, our prospects of success.

Foremost among these is medical education. Medical schools, through the training which they provide for oncoming generations of physicians, determine the future shape of medicine. Measured in terms of the scientific competence of its graduates, medical education in the U.S. ranks with the best. The continuing challenge is to assure that this scientific competence is effectively applied to meet the needs of people in their family and community settings.

Medical education, as most of us know it, is the product of the scientific revolution of this century. Some 50 years ago, the Flexner report harnessed medical education to the rising star of science. The generation of new knowledge through research became for medical schools a responsibility second only to teaching; their faculties, necessarily scientists and specialists.

The university-medical school complex today represents excellence in medical science and care. But it is for the most part a peculiarly sheltered institution. Relationships with the surrounding community, and the people who live in it, tend to be distant and impersonal. Can medical education conducted almost entirely in this scientific academic setting fully prepare physicians of the future to meet health needs in the community?

Several years ago, Dr. Kerr White and his associates at North Carolina combined data from several studies to describe the health experience of a group of 1,000 adults in a given month. Of the 1,000, some 750 reported an instance of illness or injury. About 250 of them consulted a physician; nine were hospitalized. One—out of the original 1,000—was referred to a university medical center.

Today's Health Needs

It may be that the figures in this study would no longer hold today. Nevertheless, it suggests the implications of the isolation of the medical center and raises the question of whether the sample of health needs actually seen at the university medical center is representative of the substantive health problems of the community—the problems which medical students will encounter in practice.

Over the past few years, medical schools have moved to establish closer affiliations in the community. Some have taken the community, or a segment of it, as a kind of laboratory in which they assume full responsibility for medical care. This is an important step in relating teaching and research programs to community needs.

Further Step

I propose a further step—the creation, in every medical school, of a third faculty, oriented to the community. Dean Willard of Kentucky, who has pioneered in this field, calls it the "outside" faculty, as contrasted with the conventional departments.

For this third faculty, the community would serve as classroom and laboratory. Here it would prepare students for medical practice in the community—outside the medical center. Here it would conduct research, exploring new forms and patterns for the delivery of health services, refinements of existing patterns. But above all, it would teach, and in the setting in which most medicine is practiced.

This third faculty could serve a second important purpose. Its existence would help to link the school's medical center and the community's health resources. It would form a kind of bridge between the worlds of academic and community medicine, encouraging and stimulating the flow of new information into practice, feeding back to the medical school first-hand knowledge of health problems in the community.

Physician of Future

For the physicians of the future, this kind of training would help to bring the individual human being back to the center of the stage in medical practice.

The transition will not be easy, nor will it solve overnight the complex problems of delivering health services to the people who need them. But as physicians move out to meet the health problems of people, supporting services will follow.

As medical education involves itself deeply in the community, new forms and patterns of practice may arise that will enable medicine to deliver its full capability. Medicine now has little objective knowledge of how various barriers—economic, sociological, psychological—affect the seeking of medical care by different groups of our people. Medical schools, backed by the resources of the university in the social sciences, are equipped to explore these questions just as they explore the unknowns of the basic sciences.

Turning Point

I believe that American medicine, in the mid-60's, is at a turning point no less significant than that marked by the Flexner report a half century ago. In our accommodation to science in medical education and practice, we have come close to losing our ties with the community and its people. With a conscious and deliberate effort, led by medical education, to reestablish those ties, we can recapture the human component of medicine and in the process, enable scientific medicine to achieve its full potential.

WILLIAM H. STEWART, M.D., Surgeon General, U.S. Public Health Service, Washington, D.C.

Reprinted from Massachusetts Physician.

The National Assn. of Insurance Commissioners will establish a central date collection system on medical liability insurance. A serious roadblock to finding solutions to the nation's medical liability insurance problem has been a lack of data. Carriers will be required to provide the data in standardized form in their annual reports to state insurance commissioners, who will forward the information to NAIC headquarters in Milwaukee for tabulation.

The number of HMOs in the U.S. is declining, according to InterStudy, a Minneapolis research organization. An April census showed 181 HMOs delivering care, two fewer than there were three months earlier. An InterStudy spokesman said the trend indicates the need for amendments to the federal law, particularly its elaborate benefit package.

"You, the Telephone Manager," is a telephone training program for medical office assistants offered to county medical societies through the AMA's Dept. of Practice Management. Each is arranged by the county society which charges a minimum registration fee of $10-$15 to cover the cost of materials and the instructor's travel. For information, contact Dept. of Practice Management, AMA Headquarters.

AMA's third regional continuing medical education program goes to Minneapolis July 26-27. It is presented in cooperation with the U. of Minnesota Medical School and the Minnesota State Medical Assn. The fourth program is set for Sept. 27-28 in Williamsburg, Va. For information, write Dept. of Scientific Assembly, AMA Headquarters.

The Respiratory Control of the Heartbeat

The First Louis H. Nahum Lecture*

(First of Two Parts)

Hebbel E. Hoff, M.D., Ph.D., Bonnalie O. Campbell, Ph.D. and Stephanie Deavers, B.A.

Part I

In summarizing the seventh chapter of his great work on "An Anatomical Disquisition on the Motion of the Heart and Blood in Animals," devoted to the demonstration that "the blood percolates the substance of the lungs from the right ventricle of the heart into the pulmonary veins and left ventricle," William Harvey wrote:

> Whence it appears that, although one ventricle of the heart, the left to wit, would suffice for the distribution of the blood over the body, and its eduction from the vena cava, as indeed is done in those creatures that have no lungs, nature, nevertheless, when she ordained that the same blood should also percolate the lungs, saw herself obliged to add another ventricle, the right, the pulse of which should force the blood from the vena cava through the lungs into the cavity of the left ventricle. In this way, therefore, it may be said that the right ventricle is made for the sake of the lungs, and for the transmission of the blood through them . . .[1]

Thus, in a masterful fashion, Harvey opened the whole problem of the relation of the heart to the lungs, and of the act of breathing to the circulation, although his predecessors, Galen among them, had recognized the interconnections of the venous and arterial systems across the lungs. Galen thought only in terms of a pathway by which *some* of the blood could enter the arterial from the venous side, or even pass in the opposite direction. By demonstrating that *all* the blood passes in sequence through the pulmonary circuit after traversing the systemic and only from the right to the left ventricle, Harvey raised the question of the physiological significance of pulmonary circulation, and indeed of respiration itself.

Galen had approached the truth. The bellows-like action of the lungs induced him to suggest that if we knew more exactly why fanning a fire increases the flame, we might know more about the function of breathing. It remained, however, for Richard Lower to recognize in its simplest form the respiratory function of blood in his "Treatise on the heart, on the movement and the colour of the Blood." His experiments led to the earliest apparatus for cardiopulmonary bypass, to the first experiments on perfusion of the circulation by fluids other than blood, and to the first published account of transfusion of blood. Lower, a member of the group at Oxford that included Robert Boyle, Robert Hooke, Christopher Wren, Thomas Willis, and John Mayow, postulated the presence in air of a constituent or property he called the "nitrous spirit," which, he proposed, reached the blood through the pores of the lungs and give it its arterial color. "On this account," he concluded, "it is extremely probable that the blood takes in air in its course through the lungs, and owes its bright colour entirely to the admixture of air. Moreover, after the air has in large measure left the blood again within the body and parenchyma of the viscera, and has transpired through the pores of the body, it is equally consistent with reason that the venous blood, which has lost its air, should forthwith appear darker and blacker."[2]

From here there was direct communication, however tortuous the pathway, from the Oxford group, through Stephen Hales to Joseph Priestley and Lavoisier. After comparative calorimetric studies of *in vitro* combustion of charcoal and *in vivo* respiration of animals and man, Lavoisier concluded:

> Respiration is nothing but a slow combustion of carbon and hydrogen, which is in every way similar to that which takes place in a lamp or lighted candle, and in this respect animals that breathe are true combustibles, bodies which burn and consume themselves . . . Since, in respiration, it is the blood that furnishes the combustibles, if the animals do not restore by food what they lose in this respiration, the oil will soon run out in the lamp, and the animal will perish, as a lamp is extinguished when it lacks nourishment.
>
> In respiration as in combustion, it is the air that furnishes the oxygen and the heat. It extracts from the blood a portion of its specific heat, which in the course of the circulation distributes itself with the blood throughout all parts of the animal

---

DR. HEBBEL E. HOFF, Professor and Chairman, DR. BONNALIE O. CAMPBELL, Assistant Professor of Physiology and MS. STEPHANIE DEAVERS, B.A., Instructor in Physiology, all of the Department of Physiology, Baylor College of Medicine, Houston, Texas.

**Delivered by Dr. Hoff and sponsored by the Department of Physiology, Yale University School of Medicine.*

economy, and there bestows that nearly constant temperature that is observed in all animals that breathe.[3]

Our interest, in this paper, does not lie in the intimate mechanisms of respiration, but rather in the way in which the heartbeat is related to the rhythms of breathing. This is by no means a new subject; Stephen Hales noted a relation between blood pressure and breathing in the very first studies on blood pressure, and Carl Ludwig made this relation the theme of his first work to introduce graphic recording in physiology and medicine. Nevertheless, the remarkable discoveries of the function of the baroreceptors of the carotid sinuses and other great vessels have so emphasized the role of the systemic circulation in cardiac regulation that it is perhaps time to review some of the work that emphasizes the role of respiration in the control of the heartbeat, and promises a closer understanding of Harvey's thought that "the right ventricle is made for the sake of the lungs."

I. The Primitive Origins of the Respiratory Heart Rate Relationship in the *Elasmobranch*

The *Elasmobranch* seems to fulfill the requirements sought in an animal model where not only the right ventricle, but indeed the whole heart is closely related to respiratory function. In this animal, all the blood is pumped directly from the single ventricle to the gills, after which it is collected into the aorta and distributed to the systemic capillaries as seen in Figure 1, and most clearly in the outline drawing at the lower right. From these capillaries the blood flows into the cardinal vein and is brought back to the heart, to be pumped again, in sequence, through the double capillary beds of the gills and the systemic circulation.

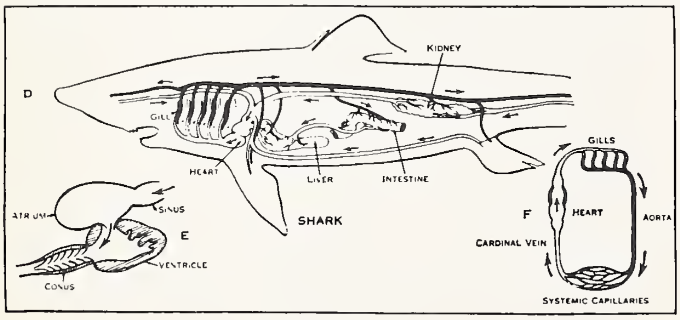

Figure 1

Circulation of the shark. The gills are in sequence with the systemic capillaries, as illustrated in the sketch on the right.

It might thus be surmised that in the *Elasmobranch* the gill or pulmonary circulation might have a relatively higher priority than in mammals, where the systemic circulation takes precedence in the work it demands of the heart and in the pressure maintained within its arterial tree. Schonlein,[4] Lutz,[5] and Satchell[6] [8] have noted a one-to-one relation of heartbeats and respiratory cycles in sharks and other *Elasmobranchs* where the respiratory rate is a simple multiple of the heart rate. Amend, Hoff, and Amend[9] studied the dogfish of Puget Sound, *Squalus suckleyi,* which aerates its gills by forcibly contracting the pharynx to expel water over the gills. After immobilization by tricaine methanesulfonate (Finquel, Ayerst Laboratories, New York) the dogfish could be studied in small holding pens filled with circulating fresh, oxygenated sea water.

A typical electrocardiogram obtained from such a preparation is shown in the top channel of Figure 2.

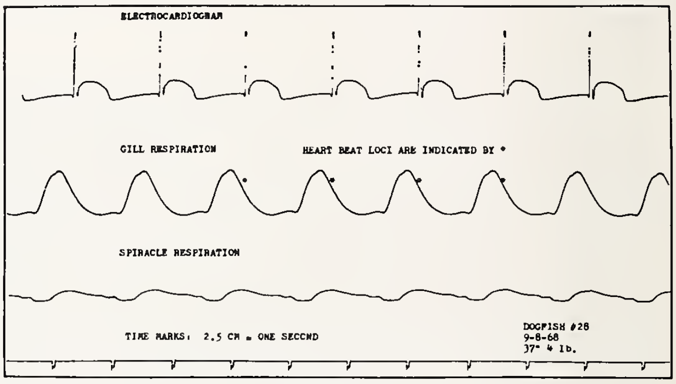

Figure 2

Upper channel: electrogram of the dogfish, *Squalus suckleyi* derived from needle electrodes inserted near the heart. P waves are not seen but QRS and T appear. In the middle channel impedance across the gills is recorded; downward movement of the pen indicates lessened impedance as water is forced out across the gills. A 1:1 heartbeat-respiration ratio is maintained with a quite constant locus of heartbeat in the gill cycle.

The record was obtained by needle electrodes inserted ventrally posterior to the sternal arch, and advanced as closely to the heart as possible without coming into contact with it. Similar electrodes were inserted ventrally at the base of each pectoral fin, advanced until the tip came to rest near the midpoint of the gill apparatus, and connected to an impedance pneumograph. Upward movement of the pen indicates an increase in impedance as the pharynx filled with water, while downward movement of the pen indicates outward flow of water across the gills. On the last channel spiracle movement was recorded in the same way.

The simplest one-to-one relationship of heart rate and respiration is depicted in this figure (Figure 2), and the locus of each ventricular beat in the corresponding respiratory cycle indicates that the heartbeat occurs normally while water is being expelled across the gills.

Simple multiples of gill movements for each heartbeat were also seen, with ratios of 2:1, 3:1, and even 5:1. An example of the latter can be seen in Figure 3. No examples were found in which there were more heartbeats than respiratory cycles.

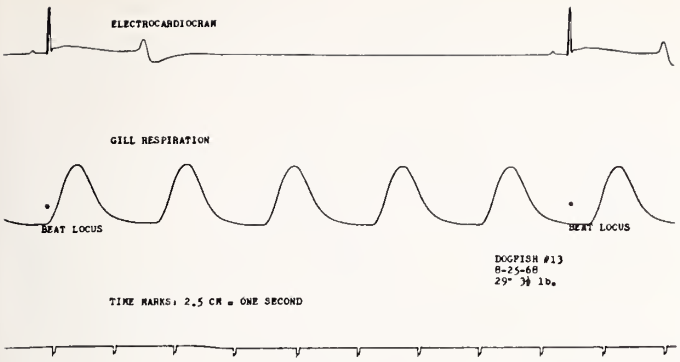

Figure 3

The dogfish. A 5:1 relationship of gill cycles to heartbeats is recorded, with the beat locus at the end of water flow.

The linkage between heartbeat and respiration was, however, by no means absolutely fixed. As shown in Figure 4, the basic rhythm of two respiratory cycles for each heartbeat was maintained, but the third heartbeat was late and fell at an "unsatisfactory" phase of the respiratory cycle. The following beat was accelerated, and after a curtailed interval, reestablished an "appropriate" locus of the beat during gill perfusion. In other preparations with a 2:1 respiratory heart rate ratio, a similarly inappropriate heart locus was corrected in a different manner; the cardiac cycle was prolonged beyond an additional respiratory cycle to give a ratio of 3:1, after which the 2:1 ratio was resumed with the appropriate relationship of heartbeat and gill perfusion.

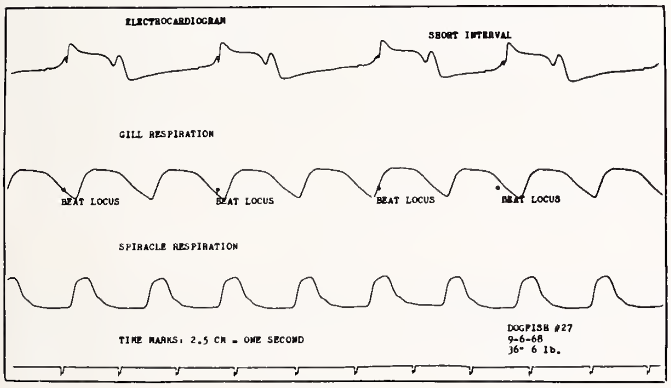

Figure 4

The dogfish. In a general 2:1 relationship of gill to cardiac cycles the beat locus is displaced into the filling stage. This is corrected by an early beat which reestablishes the gill cycle.

At other times, when gill movements were momentarily arrested, the heart also paused. The dogfish frequently exercises a maneuver of holding its breath while its pharynx becomes overfilled, and then, by a greater than normal expulsive act, flushes a larger volume of water across the gills, presumably to clean them. Usually one normal gill cycle drops out during the overfilling phase, the forceful expulsion is accompanied by a heartbeat, and thereafter the heart usually pauses for an extra gill cycle before resuming its previous relationship with respiration.

Recognizing that these species possess a complete and functional autonomic nervous system and respond appropriately to acetylcholine, atropine and catecholamines, it can be suggested that these primitive organisms exhibit the prototype of the relationship between respiration and heartbeat. As has been postulated in mammals, the two rhythms must be basically independent, and the interconnection must be accomplished via the nervous control of the heart. This in turn is regulated by communications between the cardiovascular center in the medulla with its cardiac efferent connections and the constellation of respiratory centers in the medulla and pons with their widespread afferents. The heartbeat and respiration thus appear as an integrated act aimed at maximum efficiency in the oxygenation of the blood.

II. The Respiratory Heart Rate Response in the Sheep

The simple one-to-one relationship of breathing to heartbeat seen in the dogfish has not been reported in unanesthetized or untreated mammals, but the increase in heart rate on inspiration is well known as sinus or respiratory arrhythmia, and has been analyzed and mathematically modeled. Most accounts agree that in the mammal the major nervous factor linking the heartbeat with breathing is a variation in vagal tone induced by respiration. The relationship is most marked when the heart rate is slow, and virtually disappears when the vagi are inactivated by atropine, or by any procedure that increases the heart rate. Presumably the act of inspiration reduces the discharge of vagal neurones supplying the heart, removing some inhibition from the S-A node, permitting the natural rhythm of the heart to express itself. Whatever central reciprocal excitation of the sympathetic nervous supply to the heart might take place would reinforce this effect.

Norton, Hoff, Bellis and Ham[10] investigated the heart and respiratory rate in sheep. A slow intravenous drip of chloral hydrate was administered as a tranquilizer. Gross and Hoff[11] had shown previously that in the dog, chloral hydrate produces a marked vagotonic effect evidenced by S-A slowing and arrest, A-V delay and block and prolongation of atrial fibrillation.

In these circumstances, heart rates as low as 40 to 60 beats per minute were frequently seen, and a one-to-one respiratory heart rate relationship was recorded over considerably periods of time. Figure 5 is representative of many similar records, and shows that although the two rhythms were not completely locked in, shorter respiratory cycles were indeed associated

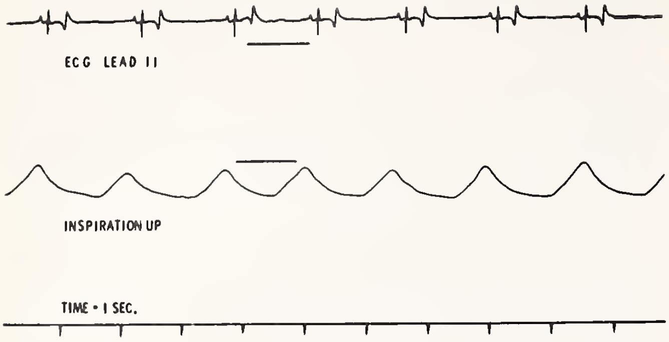

Figure 5

Tranquilized (IV drip chloral hydrate) sheep standing quietly in stall. A 1:1 heartbeat-respiration ratio is depicted. Bars identify correspondingly short cardiac and respiratory cycles.

with shorter cardiac cycles and vice versa. It seems probably that this was not a simple coincidence of the two rates, but that they were actually linked.

This conclusion is strengthened by the fact that as the heart rate increased, there was no regular progression of heartbeats out of phase with respiration, but an abrupt development of a two-to-one relationship. Here, contrary to the events seen in the dogfish, there were two heartbeats with each breath as shown in Figure 6. Figure 7 shows the distribution of such beats derived from measurements of 246 respiratory cycles. It demonstrates that while the beats were not firmly locked into the respiratory cycle, they fell within two distribution curves coincident with the end of expiration and the peak of inspiration. This clear pairing of beats argues strongly for a definite causal, and not a coincidental relationship of the heartbeat with respiration, and presents a much more solid argument for respiratory control of the heartbeat.

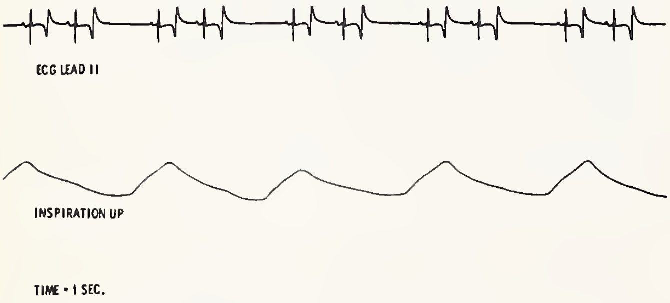

Figure 6

Tranquilized sheep. Illustration of the most common mammalian relationship of two heartbeats for each breath.

In one series of 362 consecutive respiratory cycles atrial rate averaged 115 beats per minute and only little change was noted with respiration. Nevertheless, A-V block occurred once with each breath, along with a pronounced Wenckebach phenomenon. Clearly, A-V block can operate to produce a ventricular form of respiratory heart rate response which suggests that in some animals A-V block might operate as a physiological form of regulation of heart rate.

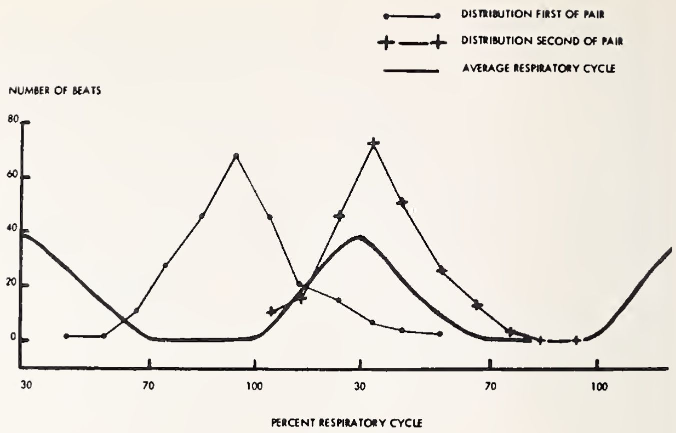

Figure 7

Distribution of each of paired heartbeats in the experiment of Figure 6, in relation to respiration, showing inspiratory and post-expiratory components.

At infrequent intervals the end of one breath was followed immediately by another; a form of "catch breath." Figure 8 shows an example of one of these breaths in an animal in which there was otherwise a single heartbeat per breath. This extra breath was accompanied by an extra beat, paired very much like the breaths in Figure 7. This always occurred unless the first beat came so late in the first respiratory cycle that refractoriness prevented the appearance of the second beat. This observation suggests that the respiratory center undergoes cycles of activity that are not necessarily manifested in overt respiratory activity but still can influence the cardiovascular center to release a beat by centrally suppressing vagal discharge to the heart.

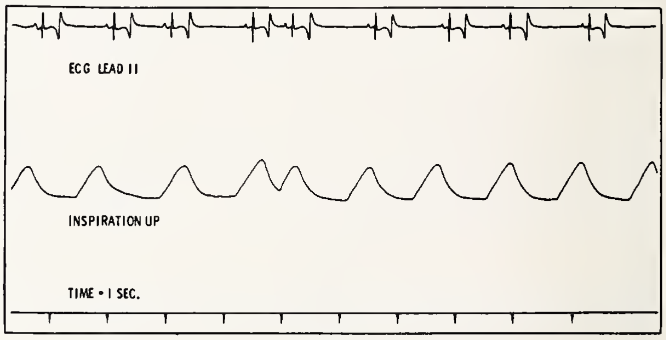

Figure 8

Tranquilized sheep with a 1:1 relationship of heartbeats and breaths, showing a "catch" breath and an additional beat to form a pair of heartbeats.

III. The Respiratory Heart Rate Response in the Morphinized Dog

Morphine is known to potentiate parasympathetic activity in the dog with particular effectiveness. Nevertheless such animals, especially with large doses of morphine, overreact to sudden loud noises or sudden painful stimuli. For this reason a dog given analgesic doses of morphine is a difficult experimental preparation. Intravenous administration of sodium pentobarbital (2-5 mg/kg) after the morphine gives a preparation that is approximately in surgical stage III plane I anesthesia. These animals are a more reliable laboratory model, and behave as though the morphine were the primary agent involved. The heart rates of morphine pentobarbital dogs are not unlike those of quiet, unanesthetized animals.

Figure 9 shows a segment of a record from such a preparation. In addition to the standard limb lead II ECG, and the impedance pneumogram, the atrial electrogram was recorded in channel II with a bipolar intraatrial catheter electrode introduced via the jugular vein. In this dog, in addition to its usual vagotonic effect on the heart, morphine produced periods of tachypnea, a typical influence in the dog, as was shown by Breckenridge and Hoff.[12] Further, the heart rate and the respiratory rhythm fell into a simple one-to-one relationship over long periods of time. Figure 9 shows the end of 97 consecutive breaths in which such a relationship was maintained, although eventually increasing prematurity of the heartbeat made room for an extra beat to be generated; thereafter the one-to-one relationship was maintained. This phenomenon reemphasizes the lack of rigid association between the heartbeat and breathing; and suggests also that the heartbeat is the regulated variable in this relationship.

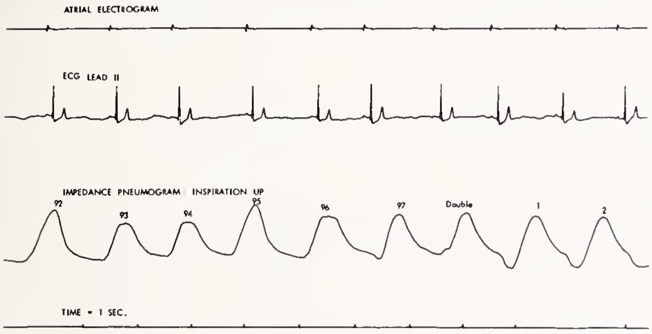

Figure 9

Morphine-pentobarbital dog. A 1:1 heartbeat-respiration ratio except for a single pair of heartbeats. Heartbeats and breaths are correspondingly irregular.

The most common ratio in the dog as well as in the sheep was that of two heartbeats for each breath as seen in Figure 10. In the dogfish, the relationship was always in the reverse direction; from a one-to-one relationship, the number of breaths per heartbeat increased, while maintaining a simple numerical ratio. In the mammal, on the contrary, the number of heartbeats per breath increased, maintaining a simple numerical relationship until with further increase in rate, the relationship was lost and only an acceleration during inspiration remained, to constitute the usual respiratory arrhythmia.

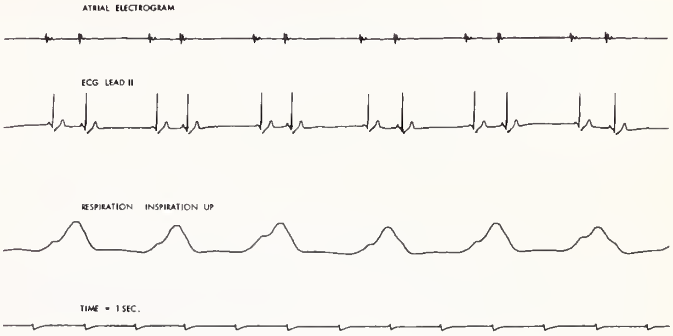

Figure 10

Morphine-pentobarbital dog. Characteristic double cardiac cycle with each breath.

Figure 11 depicts a common occurrence in the morphinized animal, particularly when continuous vagal stimulation is applied, as in this case. In this experiment, right vagal stimulation produced total cardiac arrest, but, at the peak of a deep inspiration, a single nodal escape beat was released, followed by a retrograde P wave, which precipitated atrial fibrillation. Generally, in the ventricles, at least two closely placed beats are required to induce fibrillation (Prochaska and Hoff,[13] Cecil, Stewart and Hoff[14]) but in the atria, arrested by vagal stimulation, a single discharge, whether spontaneous, induced by local stimulation, or by a retrograde beat, often starts fibrillation as shown in this figure.

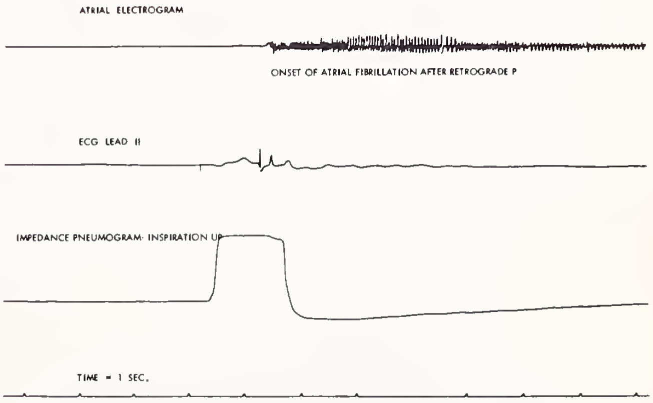

Figure 11

Morphine-pentobarbital dog. The cardiac arrest produced by vagal stimulation is interrupted by a single nodal escape beat which is conducted antidromically to the atria and initiates atrial fibrillation. The coincidence of the nodal escape beat and a deep breath suggests the possibility of respiratory control over nodal pacemaking.

Despite the presence of atrial fibrillation, the animal continued to exhibit one-to-one relationships all the more remarkable because both respiration and heart rate were notably irregular (Figure 12). Here, as in cases of A-V block, the respiratory heart rate relationship must be maintained by vagally mediated

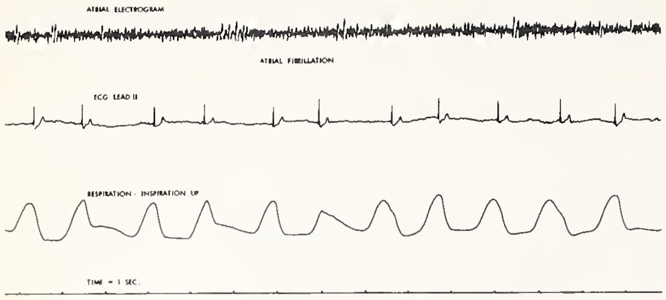

Figure 12

Same preparations as in Figure 11. Breathing is irregular and there is a corresponding ventricular arrythmia, the first eight beats and the first eight breaths coming in fairly well marked pairs.

A-V nodal control. This emphasizes the function of the A-V junctional system as a redundant circuit which can regulate ventricular rate as effectively as the S-A node. The S-A node is capable, of course, of infinite gradations in response to variations in its nervous control, while the A-V node acts more as an all or nothing gate.

In Figure 13 the tachypnea became more rapid, but yet, when heart rate and respiration were carefully counted, a one-to-one relationship was still maintained. Bearing in mind the vagaries of the A-V junctional system and the pattern of the respiratory heart rate relationship, it is understandable that heartbeats can vary as widely as they do in their relation to respiration.

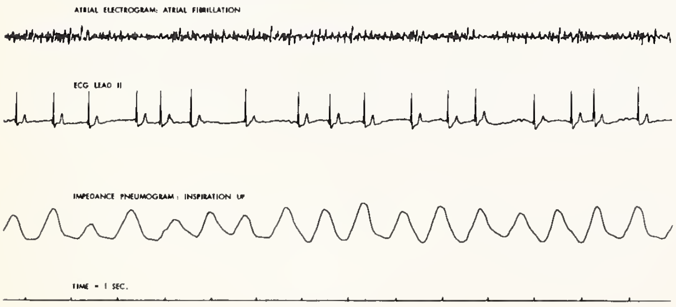

Figure 13

Continuation of the same experiment showing an increase in tachypnea and irregularity of both heartbeats and breaths, with the maintenance of a 1:1 relationship.

Even during atrial fibrillation the two-to-one relationship is the one most frequently seen, and is the most enduring (Figure 14). Here respiration became more regular, breaths were deeper as well as slower, and consequently the heartbeats were more closely associated with breathing.

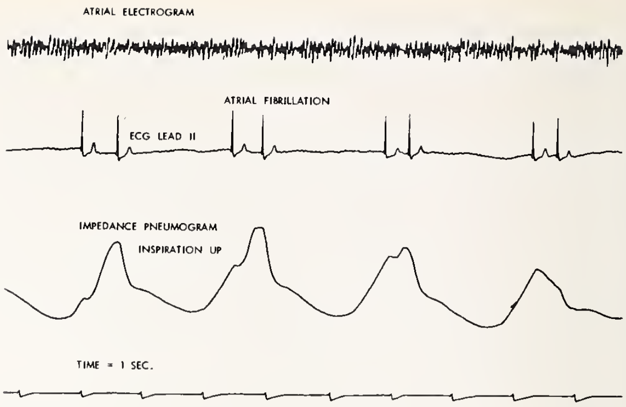

Figure 14

Morphine-pentobarbital dog. An example of slow respiration in this preparation with the passage of two impulses across the A-V bridge with each breath.

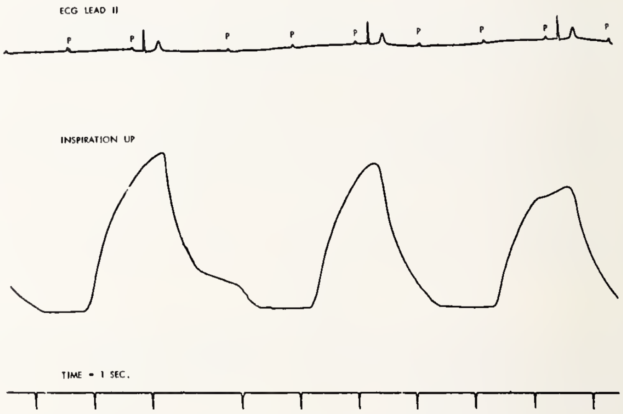

Figure 15

Morphine-pentobarbital preparation. Continuous left vagal stimulation produces 3:1 A-V block, with the conducted beat at the peak of each inspiration.

In Figure 15 the intact left vagus was stimulated at a frequency and intensity to elicit very little central effect but to produce a very regular three-to-one A-V block. The atrial beats falling in the intervals between breaths were blocked, but the atrial impulses at the peak of inspiration were conducted across the junctional tissue and evoked ventricular beats. In addition, the sinus rhythm notably showed a respiratory influence permitting three atrial beats to appear for each breath and so regulated the atrial rhythm that a P wave appeared in very much the same position at the peak of each inspiration. In this case both the S-A rhythm and A-V conduction were simultaneously and quite accurately related to the respiratory rhythm, the ventricles in a 1:1 and the atria in a 3:1 ratio.

In Figure 16 stimulation of the right vagus produced no A-V junctional block, but established a simple one-to-one relationship of heartbeat and respiration where none had existed before. Such results indicate that when vagal tone is uniformly increased by extrinsic stimulation, central variation in pre-existing vagal tone can become adequate to produce a one-to-one relationship of breathing and heartbeat. In the last breath of this figure (Figure 16), the extrinsic vagal tone could not be overcome by the respiratory diminution of central vagal discharge, and no heart-

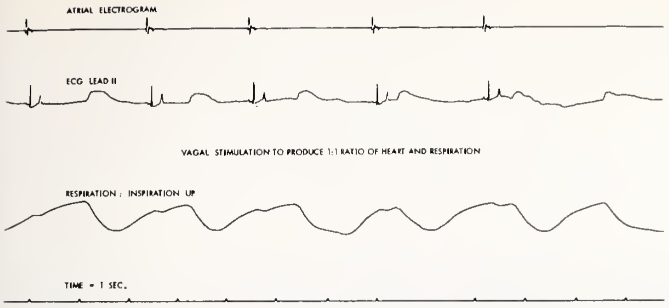

Figure 16

Morphine-pentobarbital preparation. Right vagal stimulation slowing the heartbeat which locks in to a 1:1 relation to respiration before total arrest.

beat appeared. This recreated in the mammal the situation in the dogfish, where every respiratory act did not necessarily release a heartbeat.

(This is the first part of a two-part article.)

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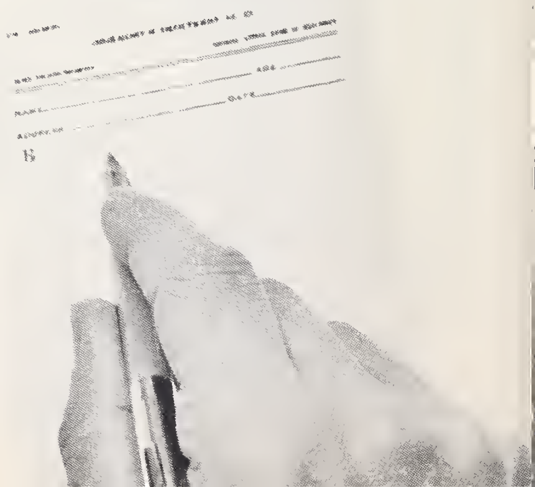

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INDICATIONS: 1. **Endocrine Disorders:** Primary or secondary adrenocortical insufficiency (hydrocortisone or cortisone is the first choice; synthetic analogs may be used in conjunction with mineralocorticoids where applicable; in infancy, mineralocorticoid supplementation is of particular importance). Congenital adrenal hyperplasia; nonsuppurative thyroiditis; hypercalcemia associated with cancer. 2. **Rheumatic Disorders:** As adjunctive therapy for short-term administration (to tide the patient over an acute episode or exacerbation) in: psoriatic arthritis; rheumatoid arthritis (selected cases may require low-dose maintenance therapy); ankylosing spondylitis; acute and subacute bursitis; acute nonspecific tenosynovitis; acute gouty arthritis. 3. **Collagen Diseases:** During an exacerbation or as maintenance therapy in selected cases of—Systemic lupus erythematosus; acute rheumatic carditis. 4. **Dermatologic Diseases:** Pemphigus; bullous dermatitis herpetiformis; severe erythema multiforme (Stevens-Johnson syndrome); exfoliative dermatitis; mycosis fungoides; severe psoriasis. 5. **Allergic States:** Control of severe or incapacitating allergic conditions intractable to adequate trials of conventional treatment: Seasonal or perennial allergic rhinitis; bronchial asthma; contact dermatitis; atopic dermatitis; serum sickness. 6. **Ophthalmic Diseases:** Severe acute and chronic allergic and inflammatory processes involving the eye and its adnexa such as—allergic corneal marginal ulcers; herpes zoster ophthalmicus; anterior segment inflammation; diffuse posterior uveitis and choroiditis; sympathetic ophthalmia; allergic conjunctivitis; keratitis; chorioretinitis; optic neuritis; iritis and iridocyclitis. 7. **Respiratory Diseases:** Symptomatic sarcoidosis; Loeffler's syndrome not manageable by other means; berylliosis; fulminating or disseminated pulmonary tuberculosis when concurrently accompanied by appropriate antituberculous chemotherapy. 8. **Hematologic Disorders:** Idiopathic and secondary thrombocytopenia in adults; acquired (autoimmune) hemolytic anemia; erythroblastopenia (RBC anemia); congenital (erythroid) hyperplastic anemia. 9. **Neoplastic Diseases:** For palliative management of: leukemias and lymphomas in adults; acute leukemia of childhood. 10. **Edematous States:** To induce a diuresis or remission of proteinuria in the nephrotic syndrome, without uremia, of the idiopathic type or that due to lupus erythematosus. 11. **Miscellaneous:** Tuberculous meningitis with subarachnoid block or impending block when concurrently accompanied by appropriate antituberculous chemotherapy. Systemic dermatomyositis (polymyositis).

CONTRAINDICATIONS: Systemic fungal infections.

WARNINGS: In patients on corticosteroid therapy subjected to unusual stress, increased dosage of rapidly acting corticosteroids before, during, and after the stressful situation is indicated.

Corticosteroids may mask some signs of infection and new infections may appear during their use. There may also be decreased resistance and inability to localize infection. Prolonged use may enhance the establishment of secondary ocular infections due to fungi or viruses.

Since adequate human reproductive studies have not been done, the use in pregnancy, nursing mothers or women of childbearing potential requires that the possible benefits be weighed against the potential hazards to the mother and the embryo or fetus. Infants should be observed for signs of hypoadrenalism.

Average and large doses of hydrocortisone or cortisone can cause elevation of blood pressure, salt and water retention, and increased excretion of potassium. These effects are less likely to occur with the synthetic derivatives except when used in large doses. Dietary salt restriction and potassium supplementation may be necessary. All corticosteroids increase calcium excretion.

While on corticosteroid therapy, patients should not be vaccinated against smallpox. Other immunization procedures should not be undertaken in patients who are on corticosteroids, especially on high dose, because of possible hazards of neurological complications and a lack of antibody response.

The use of corticosteroids in active tuberculosis should be restricted to those cases of fulminating or disseminated tuberculosis in which the corticosteroid is used for the management of the disease in conjunction with an appropriate antituberculous regi-

If corticosteroids are indicated in patients with latent tuberculosis or tuberculin reactivity, close observation is necessary as reactivation of the disease may occur. During prolonged corticosteroid therapy, these patients should receive chemoprophylaxis.

PRECAUTIONS: Hormone therapy is an adjunct to, and not a replacement for, conventional therapy.

Dosage should be individualized according to the severity of the disease and the response of the patient. As soon as a satisfactory clinical response is obtained, the daily dose should be reduced, either to termination of treatment or to the minimal effective maintenance dose level. The lowest possible dose should be used and when reduction in dosage is possible, the reduction should be gradual if the drug has been administered for more than a few days. If a period of spontaneous remission occurs in a chronic condition, treatment should be discontinued.

Drug-induced secondary adrenocortical insufficiency may be minimized by gradual reduction of dosage. This type of relative insufficiency may persist for months after discontinuation of therapy; therefore, in any situation of stress occurring during that period, hormone therapy should be reinstituted. Since mineralocorticoid secretion may be impaired, salt and/or a mineralocorticoid should be administered concurrently.

There is an enhanced effect of corticosteroids on patients with hypothyroidism and in those with cirrhosis.

Corticosteroids should be used cautiously in patients with ocular herpes simplex because of possible corneal perforation.

Psychic derangements may appear or existing emotional instability or psychotic tendencies may be aggravated by corticosteroids.

Aspirin should be used cautiously in conjunction with corticosteroids in hypoprothrombinemia..

Steroids should be used with caution in nonspecific ulcerative colitis, if there is a probability of impending perforation, abscess or other pyogenic infection; diverticulitis; fresh intestinal anastomoses; active or latent peptic ulcer; renal insufficiency; hypertension; osteoporosis; and myasthenia gravis.

Growth and development of infants and children on prolonged corticosteroid therapy should be carefully observed.

Blood pressure, body weight, routine laboratory studies, including 2-hour postprandial blood glucose and serum potassium, and a chest X-ray should be obtained at regular intervals during prolonged therapy. Upper GI X-rays are desirable in patients with known or suspected peptic ulcer disease.

ADVERSE REACTIONS: Fluid and Electrolyte Disturbances. Sodium retention; fluid retention; congestive heart failure in susceptible patients; potassium loss; hypokalemic alkalosis; hypertension. **Musculoskeletal.** Muscle weakness; steroid myopathy; loss of muscle mass; osteoporosis; vertebral compression fractures; aseptic necrosis of femoral and humeral heads; pathologic fracture of long bones. **Gastrointestinal.** Peptic ulcer with possible perforation and hemorrhage; pancreatitis; abdominal distention; ulcerative esophagitis. **Dermatologic.** Impaired wound healing; thin fragile skin; petechiae and ecchymoses; facial erythema; increased sweating. May suppress reactions to skin tests. **Neurological.** Increased intracranial pressure with papilledema (pseudotumor cerebri) usually after treatment. Convulsions; vertigo; headache. **Endocrine.** Development of Cushingoid state; suppression of growth in children; secondary adrenocortical and pituitary unresponsiveness, particularly in times of stress, as in trauma, surgery or illness; menstrual irregularities; decreased carbohydrate tolerance; manifestations of latent diabetes mellitus; increased requirements for insulin or oral hypoglycemic agents in diabetics. **Ophthalmic.** Posterior subcapsular cataracts; increased intraocular pressure; glaucoma; exophthalmos. **Metabolic.** Negative nitrogen balance due to protein catabolism.

DOSAGE AND ADMINISTRATION: The initial dosage may vary from 4 to 48 mg per day. **Requirements are variable and must be individualized on the basis of the disease under treatment and the response of the patient.** The proper maintenance dosage should be determined by decreasing the initial dosage in small decrements at appropriate time intervals until the lowest dosage which will maintain an adequate clinical response is reached. If after long-term therapy the drug is to be stopped, it is recommended that it be withdrawn gradually rather than abruptly.

ALTERNATE-DAY THERAPY (AOT): ADT is a corticosteroid dosing regimen in which twice the usual daily dose of corticoid is administered every other morning. The purpose of this mode of therapy is to provide the patient requiring long-term pharmacologic dose treatment with the beneficial effects of corticoids while minimizing certain undesirable effects including pituitary-adrenal suppression, the Cushingoid state, corticoid withdrawal symptoms, and growth suppression in children.

Medrol (methylprednisolone) or other short-acting (producing adrenocortical suppression for 1¼ to 1½ days following a single dose) corticoids are recommended for ADT. Complete control of symptoms will not be possible in all patients. When considering this mode of therapy, keep in mind the basic principles and indications for corticosteroid therapy. The benefits of ADT should not encourage the indiscriminate use of steroids.

SUPPLIED: 2 mg—in bottles of 30 and 100 scored tablets; **4 mg**—in bottles of 30, 100 and 500 scored tablets and in 21 scored tablet Dosepak™, **16 mg**—in bottles of 50 scored tablets and in 14 scored tablet ADT Pak® (formerly Alternate Daypak®).

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Ethics and Social Science Research

Thomas Halper, Ph.D.

Social science aims to provide verifiable principles of human behavior, and, especially since World War II, has become steadily more sophisticated in its research techniques: sampling and interviewing procedures have improved, content analysis has been developed, more ingenious and subtle approaches to the study of small groups have been devised, statistical competence has become so widespread that analysts take it for granted in their audiences, even the traditional environmentalist assumptions have come under scrutiny. The ethical implications of these developments—or, indeed, of social science research in general—have attracted much less attention, but they are, as I hope to show, by no means trivial matters. On the contrary. The ethical implications are, as they have always been, fundamental. In discussing them, it shall be my purpose to identify several of the more important areas of controversy, and try to elucidate the more significant points of view. I shall not seek to pass on the correctness of the arguments, as if the questions raised were unambiguous problems in geometry, answerable in principle and free of all temporal dross.

The ethical problems raised by social science research are of two kinds, problems of ends and problems of means.

Problems of Ends

Traditionally, social scientists have looked on themselves as seekers of truth, and on truth-seeking as obviously a self-justifying activity. But with the great upsurge in interest in morality accompanying the civil rights and anti-war movements, some social scientists are no longer so sure. Suppose, they ask, the results of one's research seem to further ends one finds abhorrent. Ought one nevertheless to persist, oblivious to the consequences of his work, like a piano player in a brothel claiming that his only interest is in his music?

In 1973 at the University of California, Berkeley, the issue arose in the context of a debate provoked by the work of Arthur R. Jensen, a geneticist who contended that genetic factors were strongly involved in the IQ disparities between whites and blacks. Some faculty at the university maintained that such research was harmful to blacks and, by providing a scientific rationale for racism, to the entire society, as well. Just as federal laws protect individuals from the harmful consequences of medical research, they argued, so should the university protect groups from the harmful consequences of social research. There was, in any case, no decent reason for wanting to show that the IQ disparities were largely genetic in origin, and even if the researchers themselves were not racists, racists would exploit any evidence produced for their own evil purposes.

Opponents could reply only that stifling research because its findings might be unpleasant would be hostile to the curiosity and let-the-chips-fall-where-they-may attitude that underpins the scientific method. Such stifling, moreover, was also the mark of a dictatorship and not a free society, and the violent actions of some of the would-be "stiflers" led them often to be compared with the fascists of the 1930's who had also won notoriety for shouting down their foes.

Despite the opponents' efforts, a faculty committee was established at Berkeley—similar committees have since been established at a number of other universities—to determine the social risks and social benefits of social research. Projects that fail to satisfy the committee cannot be undertaken. Thus far, none has failed to satisfy the committee. A few opponents, however, are not mollified, observing that the potential of rejection remains and that worthy projects might be discouraged. Advocates retort that the potential of rejection may well prove useful, and that forcing researchers to justify their projects ethically is a very healthy process, no matter how discomfiting those involved may find it.

That ethical fashions—like all fashions—are susceptible to change is illustrated by contrasting the Berkeley experience with the proposal of two leading political scientists who a quarter century earlier talked of transforming much of their discipline into a "policy science." Researchers, in the view of Daniel Lerner and Harold Lasswell, should not concern themselves with the goals of political action; that is the proper province of elected politicans. Instead, researchers should identify problems, offer alternative solutions, and assess the relative feasibility and probable consequences of the choices. The ends, then, should be

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accepted as given, and the policy scientist's sole job is to develop the most efficient means thereto. Ethical concerns are banished by the division of labor and the specialization of function.

During the Vietnam war, of course, this approach was bitterly criticized. The policy scientist role, it was said, permitted many social scientists to rationalize their involvement in the effort, letting their preoccupation with techniques and tactics justify their ignoring the larger moral questions many others were trying to raise.

In the last analysis, perhaps, the social scientist's ethical problem of ends is really one of loyalty: ought his first loyalty properly be to truth (as Jensen and the traditionalists would have it), to humanity (as the critics of Jensen and policy science apparently believe), or to democratically accountable officials (as Lerner and Lasswell maintain)? A sweeping and dogmatic answer is probably a logically vulnerable one, too.

Problems of Means

Some of the problems of means may become clear if first we consider a pair of studies whose methodologies have excited considerable controversy.

One is a book entitled, *Tearoom Trade: Impersonal Sex in Public Places* (1970), by Laud Humphreys, a sociologist specializing in the investigation of deviant behavior. Humphreys studied "tearooms" (homosexual slang for men's rooms used for homosexual purposes) as a participant (i.e., lookout)—observer, unbeknownst to nearly all the homosexuals involved. When possible, he discovered their identities, gathered data on them, and in disguise interviewed them (ostensibly, as part of a social health survey) to determine their class, ethnic, political, and occupational characteristics. Elaborate precautions were taken to keep their names hidden from everyone else.

Upon the book's publication, Humphreys was attacked for deceiving the homosexuals, violating their privacy, and collecting information that could be used to blackmail, blacklist, or otherwise damage them. That his motives may have been pure—the search for truth—was dismissed as irrelevant, on the ground that nearly all snoopers can proffer good motives. We would not approve of his actions if done by the police or press, one critic noted, and we should not approve of them if done by a sociologist.

Humphreys' defenders rejoined that sociologists cannot legitimately be classed with the police or press. For the sociologist is not interested in prosecuting the observed (as the police are) or in the observed as individuals (as the press are), but rather in the observed as representatives of some larger social category (i.e., all tearoom participants). Thus, preserving the anonymity of the observed creates no professional difficulties for the sociologist, and in fact there is no invasion of privacy because he is not interested in the observed as individuals. Furthermore, Humphreys was sympathetic to homosexuals (again, unlike the police and press), and hoped that they would benefit from his research (e.g., by examining and refuting the popular misconception that homosexuals seduce innocent teenaged boys).

To this, Humphreys' critics responded that, whatever his sympathies and hopes, he placed the observed homosexuals in peril. He assumed a right to risk their reputations, jobs, family relationships, and community positions without their knowledge or consent, and this is arrogant and unethical. The contention that he did not invade their privacy because, not being interested in individuals as individuals, he did not intend to do so, was said to have completely missed the point. For matters of privacy must be approached from the victim's perspective, and not the victimizer's.

A second study is Stanley Milgram's much discussed *Obedience to Authority* (1974). Milgram recruited hundreds of subjects to his Yale laboratory, ostensibly for a study of memory. Once a subject arrived, he encountered two other men, one the apparent experimenter wearing a technician's coat and the other an ordinary looking man who was identified as another subject. The experiment, as it was described, required a teacher and a learner, and the subject and pseudo-subject drew lots for the roles. In fact, however, the lots were fixed, so that the subject was always the teacher. At this point, the pseudo-subject, the learner, was taken to another room and, visible to the subject, strapped into a chair. The pseudo-experimenter explained that the learner was to be taught a list of word associations, which were to be read by the subject, and to be given an electric shock through electrodes whenever he gave a wrong answer. The shocks were said to be painful but not permanently damaging, and were "controlled" by an apparatus with thirty switches labeled from "15 volts—slight shock" to "450 volts—XXX." The subject was told to operate the apparatus, so as to increase the severity of the shock by one step each time the learner made a mistake.

In actuality, the apparatus produced no shock and the learner was no fellow subject. Instead, he and the pseudo-experimenter were accomplices seeking to study the teacher. Strapped to his chair, the learner followed his script which incorporated many memory mistakes, after which he was appropriately "shocked." The script also prescribed his reactions: at 75 volts, he grunted; at 150 volts, he shreiked that the experiment must be ended; at 330-450 volts, he made no sound, either in reaction to the shocks or the word test questions. Although generally quite uneasy, a surprisingly sizable number of subjects continued to administer shocks until the end.

When the experiment was over, Milgram explained its true nature and purpose to the subjects, taking care to assure them that their responses had not been abnormal or shameful. Nearly all the subjects, he reported, seemed satisfied with the explanation, and many said that they had found it worthwhile and educational.

Milgram's critics, noting the comparison of the unquestioning obedience of the subjects to the behavior of Eichmann, declared that in giving the terrible orders Milgram had mimicked Hitler. The thought of a social scientist playing Hitler in the name of advancing human knowledge was attacked as "grotesque."

Moreover, Milgram was charged with putting the subjects through a horrifying experience, which their later presumably embarrassed disavowals could not conceal. Far from being a benign deception, the experiment doubtlessly produced considerable discomfort, guilt, and shame. Plainly, then, he violated the Kantian precept of viewing men not simply as means, but as ends, as well. Any talk of the alleged moral weakness of the subjects—in effect, his victims— would be the height of hypocrisy.

Milgram's defenders, for their part, argued that he was unusually sensitive to the feelings of his subjects, and, by their own accounts, had done them very little harm. The deception was unfortunate, but, like the deception medical researchers practice to measure "placebo effects," unavoidable. As for the charge of "playing Hitler," that was simply juvenile name-calling. Finally, the very mild suffering of the subjects was clearly counterbalanced by the significant informational gain for society.

Some Conclusions

In glancing back at these cases, we can identify several recurrent sources of controversy concerning ethics and social science research:

1. If the right to privacy is not absolute, neither is the social scientist's right to information.

2. If honesty remains a cherished moral value, the growth of knowledge may sometimes entail deception; the requirement of prior informed consent makes many potentially productive studies unworkable.

3. If social scientists prefer giving their curiosity and initiative full rein, others feel that laissez-faire research like laissez-faire economics exacts too high a social cost; but some believe that research straitjacketed by bureaucratic processes and regulations would be more costly still.

4. If experiments further human knowledge, the manipulation of people as if they were inanimate variables is often offensive.

As one confronts these problems and seeks to grapple with them, a further problem emerges, this time in the disingenuous guise of a solution. This is the problem of language: inevitably, one speaks of the necessity of "balancing competing interests," namely, the interests of the subjects, the experimenters, and society, and congratulated himself on devising an answer of such obvious good sense. Yet this balancing metaphor, by unjustifiably assuming a common standard of measure, avoids the key problem of nonquantifiability. How can we balance things when we have no means of determining their relative weights? The balancing approach, as a practical matter, may be adequate in extreme cases, such as the infamous experiments of Nazi physicians. But here the ethical conclusions are so clear that "balancing" is unnecessary. In close cases, on the other hand, like Humphreys' *Tearoom Trade,* balancing is really of very little value at all. And so, ultimately, we are left with this, valid but in a sense unsatisfactory, also:

> If the social scientist's goal of advancing human knowledge is laudable, it may not justify every means to that end; a social scientist is a man, too, and cannot escape the moral obligations that attach to members of the species.

Jehovah's Witnesses and Blood Transfusion

J. Lowell Dixon, M.D.

"I don't want it," says the patient.

"But I must give it to you," says the doctor.

"And I will issue a court order," says the judge.

Seldom has a problem crossed the lines between religion, medicine and the law as does that presented by the refusal of Jehovah's Witnesses to accept blood transfusion. A problem often seriously compounded by the insistence of doctors to preserve their authority in the care of the sick and the awkwardness of the courts in trying to resolve the impasse.

All parties to the problem plead a consuming interest in the welfare of the patient, but each from his own point of view. None finds it easy to understand the position of the others, despite their common objective—saving the life of another human.

Jehovah's Witnesses are deeply religious people. Their zeal for the "truth" extends into every aspect of their lives. They argue that there is no cost too high to pay to maintain integrity to God—and in support of their position they present the Bible's account of Jesus Christ himself as a case in point. So the argument of a doctor that a blood transfusion is necessary to save a life falls on deaf ears. Not that Jehovah's Witnesses want to make martyrs of themselves. They are most fond of life and their hope in the future is based on God's promise of *everlasting* life—but life which can come only to those who exercise absolute faith and confidence in Jehovah's means of providing it. This, they are satisfied, is by means of God's Kingdom under the rulership of His Son, Jesus Christ.

It is important that it be appreciated that the adamant stand of Jehovah's Witnesses is not the result of some fanatic adherence to a church law or the ruling of some ecclesiastical authority. Rather, it arises out of their personal conviction that the Bible is the inspired and truthful Word of God, Jehovah. Their determination to obey the Bible causes them to dedicate their lives to the worship and service of Jehovah. To them, maintaining faithfulness and integrity to their Creator is of paramount importance. What is a medical issue to doctors and a legal issue to lawyers is a Scriptural one to the Witnesses. A measure of real understanding, therefore, is necessary for all concerned in the medical care of Jehovah's Witnesses.

Basis for Witnesses' Convictions

The sacred respect for blood antedates the Christian era by many centuries. In fact, divine regulation for the handling of blood dates back to God's pronouncement to Noah immediately after the global flood, over 4,300 years ago. Then, for the first time, God granted permission to man to add meat to his diet, saying, "Every creature that lives and moves shall be food for you; I give you them all, as once I gave you all the green plants." But at the same time God added, "But you must not eat the flesh with the life, which is the blood, still in it." (Genesis 9:3,4)* Before that time the blood question had not been raised since man had eaten only bloodless fruits and vegetables.

Later, when the ancient nation of Israel was brought into a covenant relationship with God the restriction on blood was again emphasized. Specific, detailed instructions were given for preparing animals that were to be used as food. Man, catching a wild animal or fowl for consumption, was required to pour the blood out of the dead body and to cover it with dust. Describing his law as "the rule for all time from generation to generation wherever you live," Jehovah made it quite clear, "you shall not eat any fat or any blood." (Leviticus 3:17) The import of this was stressed again when God caused Moses to advise the people, "I have forbidden the Israelites to eat the blood of any creature, because the life of every creature is its blood." (Leviticus 17:14) Absolutely no blood, regardless of the source, animal or human, was to be taken into the body as food. It was not to be eaten, nor to be stored, for the "life" was in the blood. It belonged to God who demanded that it be poured out, unused, upon the ground—in effect, returned to him. For the Israelite this was his acknowledgement that the life of the animal belonged to God and that it was only by Jehovah's permission that he had taken the life so as to use its flesh for food.

The matter could not be taken lightly. Any violation of the law on blood was a serious sin against God, and God would call the violator to account. As indicated at Leviticus 17:10, "I will set my face against the eater [of blood] and cut him off from his people." This was not a simple dietary regulation, but rather it involved a matter of actually sinning against God, a capital crime worthy of capital punishment. No special dispensations were allowed for times of stress, in which one might feel justified in taking blood into the body. No exceptions were

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**All Scriptural quotations are from* The New English Bible.

made for peculiar circumstances or emergencies. Very simply—a man was not to take blood into his body.

What about non-Jewish people not under the Mosaic Law covenant? They too are bound to obey God's law given to Noah regarding blood, for all mankind are descendants of Noah. Furthermore, a few years after the death of Jesus, Christians were commanded to "abstain . . . from blood." (Acts 15:20) This served to put non-Jewish Christians on notice regarding Jehovah's law on blood.

To those who question that such a command should be given a literal application, Jehovah's Witnesses point to the context of this Scriptural verse. There it can be seen that four things are mentioned as being "necessary" for the Christians—abstention from "meat that has been offered to idols, from blood, from anything that has been strangled, and from fornication." (Acts 15:28,29)

Again, the scope of this decree, like the ones given to Noah and the nation of Israel, is not limited as to time and is not restricted to animal blood, nor to the taking of blood into the body through the mouth. Christians are told clearly and directly to keep themselves free from blood—as free, one might well argue, as from fornication. Notwithstanding the modern relaxed attitudes on sexual freedom, to Jehovah's Witnesses the Bible's position seems equally and unmistakably clear, both as to fornication and blood transfusion.

This simple, straight-forward position of Jehovah's Witnesses is generally known to doctors the world over. It is likely to become more so since the organization of Jehovah's Witnesses gives every evidence of continuing its phenomenal growth. Reason enough, it would seem, for a sober, objective evaluation of the medical, legal and moral issues involved.

Success of Surgery Without Transfusion

Jehovah's Witnesses readily admit that their stand on the blood issue does occasionally work a hardship on their doctors, whose medical training inculcates in them great respect for and confidence in the blood transfusion. Too, the experience of doctors has been that the religious convictions of many patients are, as a rule, not rigidly held to. In instances where these beliefs conflict with medical treatment it is ordinarily a simple matter to receive some special permission from a church official and the treatment in question is instituted. It is easy, therefore, to understand how such professionals, at times, find it difficult to cope with the unwavering stand of Jehovah's Witnesses.

When the surgical advancements of the past 50 years are reviewed, blood transfusion is always mentioned prominently. Along with improved anesthesia technics and agents in the hands of highly trained specialists, blood transfusion is credited with making much of modern surgery possible. Few have taken issue with this contention, but, significantly, the history of modern blood transfusion therapy has not established blood as a panacea, nor even a safe treatment. It is certainly no discredit to Jehovah's Witnesses, therefore, who refused blood transfusion on Scriptural grounds in the past when it was looked upon as the great harmless lifesaver.

Medical thinking has never been unanimous nor static, and in recent years it has been conflicting and changing on the subject of blood transfusion. Many now know that surgery is not only possible without blood administration but leaders in many surgical fields are recognizing definite advantages of transfusionless surgery. As an example, ten years ago Cooley et al, discussed their developing technology in an article, "Open Heart Surgery in Jehovah's Witnesses."[1] Reviewing their work later, in February 1972, they reported:

> "Since 1962 bloodless prime has been routinely utilized in more than 5,000 operations at this institution with excellent results; and several hundred of these operations were performed electively without blood transfusions in patients who were not Jehovah's Witnesses . . ."
>
> "The Jehovah's Witness patients in this series received the same treatment as all other patients except that all Witness patients received injectable iron before and after operation, and no blood was held in reserve for them at the blood bank. The only fluid they received was the priming solution and intravenously administered dextrose in dilute saline or Ringer's solution."

The conclusion of this Houston, Texas, group was as follows:

> "We believe that our experience demonstrates the feasibility of open heart surgery in Jehovah's Witnesses and, moreover, indicates that blood transfusion can and should be used sparingly to reduce morbidity and mortality in all patients."[2]

Roen and Velcek reported on their observations in Urology:

> "Our experience with Jehovah's Witnesses requiring operative procedures has demonstrated to us that blood transfusions are not necessarily essential even when hemoglobin levels are low—as low as 5 gm per 100 ml. in one of our cases . . . The only requirement is a careful and more meticulous operative technic."[3]

Their further comment on their experience is worthy of note:

> "In most instances physicians and hospital authorities have refused operations on Jehovah's Witnesses because of the problem of blood transfusion. We contend that it is wrong to deny operations to these people, no matter how extensive the contemplated surgery."[4]

Kay reported on 6,000 open heart procedures, in which blood transfusion was avoided as much as possible. His comment:

> "Since we have not been using blood for the majority of patients, it is our impression that the patients do better."[5]

The conclusion of vascular surgeons is significant:

> "The patient who is a Jehovah's Witness does not really represent a special case; and we can comply with his demands without undue concern . . . Patients who refuse to accept blood can usually undergo major operations without prohibitive risk and enjoy favorable post-operative results."[6]

Other reports of extensive surgery without the use of blood appear regularly, including open heart procedures,[7] intracranial operations,[8] and aortic aneurysmectomy.[9]

So many similar reports in lay, as well as professional publications, give real meaning to a statement made by former Secretary of the Canadian Medical Association, Dr. Arthur Kelly:

> "No doctor can be positive that a person will die if he doesn't get a transfusion or live if he does . . . It is perhaps better that the odd person die rather than the fundamental right of refusing medical treatment be impaired . . . Patients have the right to accept or reject a doctor's advice according to their desires."[10]

Court Orders Rob Patients of Rights

Many times the highly questionable solution to this dilemma has been the court order. Competent, sincere and serious people of all ages have simply had their rights as individuals taken from them. Not uncommonly this has been done without hearing or consultation. A judge, by fiat, has made such a person subject to the will of another.

This is usually accomplished without difficulty for the doctor when children are involved. Under the concept of a special form of "neglect" and the doctrine of *parens patriae* the courts have allowed many blood transfusions for minors without the consent and against the express wishes of the parents. The doctrine as used means that in such instances the inherent power and authority of the state to protect the rights of a child as an individual incapable of doing so himself is brought to bear. He is transfused on the authority of a court-appointed guardian.

As far as the doctor and the courts are concerned the problem is more difficult with adult patients. Various grounds for overriding the rights of one capable of protecting his own have been used—some bordering on the devious and the capricious. One judge took the position that if the law were made responsible for authorizing transfusion without the patient's consent her life could be preserved without compromise of her religious beliefs. This might be considered a generous offer except that it overlooks the fact that Jehovah's Witnesses are not searching for a means of avoiding compliance with God's law.[11]

Courts have ordered transfusions with a variety of justifications. In one instance a woman 32 weeks pregnant was compelled to accept transfusion, the court ruling that the fetus was entitled to protection since the "welfare of the child and the mother are so intertwined and inseparable."[12] In another case the court held that a 25 year old woman could be required to accept transfusion, giving as justification her "responsibility to the community to care for her [17 months old] infant."[11] Another court, in giving support to religious freedom of an adult, commented, "Even though we may consider appellant's belief unwise, foolish, or ridiculous, in the absence of an overriding danger to society we may not interfere therewith."[13] In contrast, a New Jersey woman was transfused on the order of a court appointed guardian, the court reasoning that there is "no constitutional right to choose to die . . . Nor is constitutional right established by adding that one's religious belief ordains his death."[14] Press releases on a recent case of a 30 year old woman needing emergency surgery quote the Superior Court Judge in his ruling. " 'Whatever interest the state may have in protecting this woman's life, it cannot override her right' to her religious belief."[15]

In reviewing the problem, medico-legal authority David S. Rubsamen noted, "No American court has had difficulty in protecting the minor in that [blood transfusion] situation. A guardian is appointed, and he grants permission for the transfusion." He added the observation that, although the constitutional guarantee of freedom of religious belief has generally been invulnerable to attack this has not received much support in American courts when it involved the right to refuse blood transfusion.[16]

Jehovah's Witnesses appreciate an opinion expressed by Chief Justice Warren Burger while a member of an appeals court. In this he recalled Associate Justice Louis Brandeis' philosophy of the "right to be let alone," which he referred to as "the most comprehensive of rights, and the right most valued by civilized man." In the words of Judge Burger, "Nothing in this utterance suggests that Justice Brandeis thought an individual possessed these rights only as to *sensible* beliefs, *valid* thoughts, *reasonable* emotions, or *well-founded* sensations. I suggest that he intended to include a great many foolish, unreasonable, and even absurd ideas which do not conform, such as refusing medical treatment even at great risk."[17]

Considering the changes presently on the political horizon, as they pertain to medical practice, there is much being written about the obvious importance of retaining the time-honored doctor-patient relationship. Few doctors can be comfortable working under the franchise of a court order for the very reason that this important relationship is destroyed by it. In most instances, to use the power of the state in such a way is distasteful to all concerned. In the mind of Jehovah's Witnesses it in no way sets aside the law of their God, Jehovah. (Acts 5:29) It is not a satisfying answer to the point at issue.

Witnesses' Stand on Blood Not Unreasonable

Jehovah's Witnesses believe that doctors should not be expected to perform operations under conditions that they themselves sincerely believe would spell failure. They fully realize that no man has real control over the forces that lead one ultimately to death. They do not ask the impossible—but evidence is conclusive that they have not always had the benefit of the "possible."

Some have mistakenly interpreted this stand of Jehovah's Witnesses as one in which an individual is exercising his "right to die." In this they are wrong. There is no such suicidal fanaticism in the thinking of Jehovah's Witnesses. The very opposite is true. They are determined to exercise every precaution, at whatever cost, in order to obey God's law on all matters and thereby be assured of life, if not now, then in the future under His Kingdom rule.

It should be noted that in defense of the position taken by Jehovah's Witnesses is its consistency. Doctors, who previously pointed to the great life-saving benefits of blood, now admit openly that advances in a number of surgical technics include extensive surgery without blood. The courts are equally inconsistent—one expectant mother was ordered to take blood against her will to "save" the life of her fetus. It was argued that the parents should not attempt to "impose religious faith" on an unborn child.[18] This despite the fact that she could have destroyed it by abortion, legally, and that without protest from the medical profession or the courts.

Jehovah's Witnesses believe that to ask their doctors to give consideration to their Scripturally trained consciences on the matter of blood transfusion is a reasonable request. In making such requests the Witnesses are willing to relieve their doctors and hospitals of responsibility for any adversity that may be due to their not taking blood. With all due respect and appreciation for the sincere and well-intentioned efforts of the medical profession, the main concern of Jehovah's Witnesses is the maintenance of their integrity to Jehovah God, whose law is perfect and whose promise is life eternal for those who serve Him faithfully. (Psalm 19:7-11)

Summary

The religious beliefs of Jehovah's Witnesses are based strictly on the Bible. Although the modern organization had its start about 100 years ago, the Witnesses point to ancient Scriptural examples and principles as the basis for their strongly-held convictions.

For example, the name "Jehovah's Witnesses" was officially adopted in 1931 but the ancient Hebrew prophet Isaiah, about 700 years before Christ, quoted Jehovah God as calling his worshipers his "witnesses." Also, in personally carrying their preaching to the homes of the people Jehovah's Witnesses are following the example of Jesus and the early disciples. This preaching, incidentally, is in response to Jesus' directive that "This good news of the kingdom will be proclaimed throughout the world as a witness to all the nations."—Matthew 24:14, *New American Bible* translation.

As a result of this proclamation by Jehovah's Witnesses, people in 207 lands have heard and responded to this "good news" about God's kingdom. Behind the "iron curtain" and in a few other countries political and religious opposition to this message is so severe the Witnesses must carry on their work underground. Many of Jehovah's Witnesses have suffered long prison terms and martyrs' deaths, even as first-century Christians, and for similar reasons.

This personalized proclamation, which includes an extensive home Bible study program, has resulted in continual yearly growth in the number of Witnesses. In 1974 there were 2,021,432 active Witnesses organized into more than 34,500 congregations. The degree of interest that others have in the Bible views of Jehovah's Witnesses may be judged by the circulation of their principal journal, *The Watchtower.* This semi-monthly magazine presently has a circulation of 8,850,000 copies each issue in 79 languages. In addition, the binderies of the Witnesses produce daily about 220,000 Bibles and hard-bound Bible study aids in more than 160 languages. None of this Bible study material is sold in book stores; it is delivered personally by Jehovah's Witnesses to interested persons.

Jehovah's Witnesses respectfully grant to others the right to their own individual views and opinions. By the same token they expect others to give them the same freedom of belief. And so it is, in a number of areas, including the question of blood transfusion, where long-established and well-entrenched traditional feelings clash with what the Bible says, the Witnesses differ from the popular views because they accept God's Word on the matter.

At the heart of the various differences some persons have with Jehovah's Witnesses is the issue of God's kingdom, that is, the issue of Universal Sovereignty. Jehovah's Witnesses put complete confidence in God's promises regarding the establishment of a perfect government, and the restoration of the earth, as well as mankind upon it, to its original perfection. Having dedicated their lives to Jehovah, they devote all their time and resources to serving him as his witnesses respecting this Kingdom.

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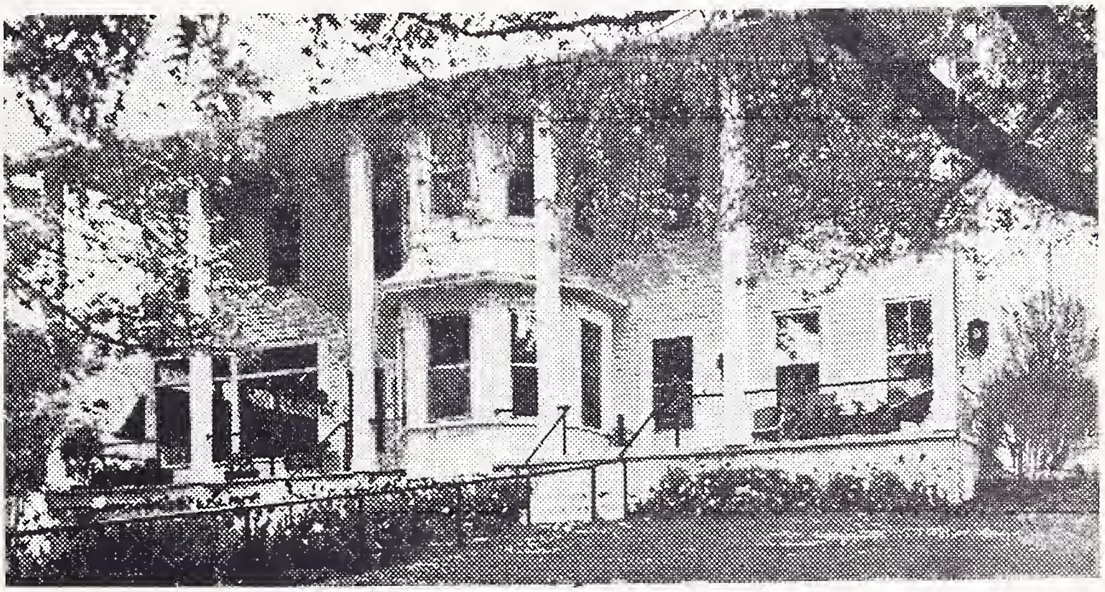

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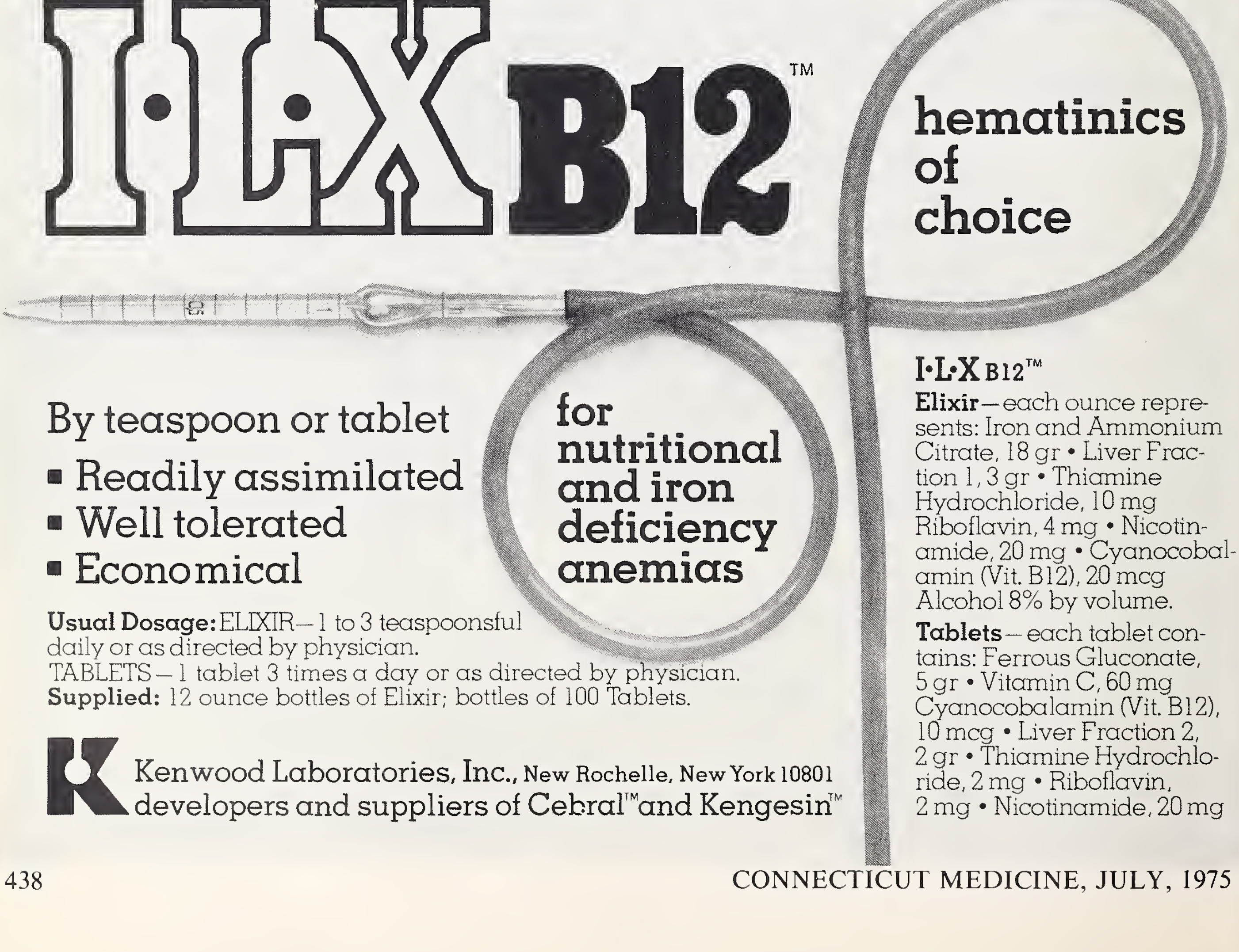

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DES: Its Uses and Effects as Contraceptive and Additive

Frank J. Rauscher, Jr., Ph.D.

If diethylstilbestrol (DES) were used as an animal feed additive and if residues of the drug were left in edible portions of animals, the result would be long-term exposures to virtually the entire population of the United States. It should be recognized that there is no health advantage to the exposed individual as is the intent when the drug is used therapeutically. The law prescribes that substances like DES which have been shown to be carcinogenic can be used as feed additives providing no residues appear in any of the edible portions of the animal at the time of slaughter. The NCI remains fully supportive of these requirements.

Concern that the newly approved use of DES as a post-coital pill for emergency situations may cause cancer in treated patients is to be viewed in light of present day knowledge and information on human subjects. Since the intended use of DES is as a post-coital contraceptive for emergency use following unprotected intercourse the primary concern over dangerous side effects, assuming the situations may cause cancer in treated patients is to be viewed in light of present day knowledge and information on human subjects. Since the intended use of DES is as a post-coital contraceptive for emergency use following unprotected intercourse the primary concern over dangerous side effects, assuming the treatment is effective, would be for the patient. Secondarily, however, concern for the embryo must be addressed since treatment might be ineffective and a child might be born despite these efforts. First I will speak to the concern for the treated patient.

Among the women treated with DES for threatened abortion no increase in the incidence of cancer at any organ site has been detected to date. The dosage of DES and the duration of treatment varied widely from 2.5 - 150 milligrams per day and from 3 to 212 days. Most of these women were treated with as much as 50 milligrams per day for 150 days or longer. These observations date back to the late 1940s. They show no evidence that such use may be cancer causing. It should be pointed out, however, that such observations are in contrast to those attendant to the use of DES for treatment of what is termed gonadal dysgenesis. Gonadal dysgenesis in the female implies defective and incomplete development of the ovaries, and DES has been used in an attempt to correct that condition. Among those patients who have been treated for 5 or more years with an average treatment time of 12 years, evidence exists which suggests an increased risk of an unusual type of cancer. In fact, in a recent study performed by Bruce S. Cutler in 1972, three cases of cancer of this unusual type were discovered among a group of 24 females who had been treated for gonadal dysgenesis over a period of 5 or more years. Because this form of cancer is so rare, it has been assumed that such treatment puts the patient at increased risk as regards this disease.

The contrast between the cancer experience of women treated for threatened abortion and those treated for defective development of the ovaries can reasonably be assumed to be the result of differences in total dosage and duration of treatment. As indicated earlier, the risk associated with the use of DES as treatment for threatened abortion was so low that it could not be demonstrated. Only at the higher exposure levels to the drug does evidence exist which suggests an increased cancer risk. On this basis it can reasonably be assumed that the post-coital use which involves 50 milligrams per day for a period of only 5 days would represent far less risk to the patient than did treatment for threatened abortion where indeed no increase in risk could be demonstrated.

Concern for the daughters exposed immediately following conception also needs to be addressed since the effectiveness of treatment is unlikely to be 100 percent, and the possibility exists that some daughters may be born to treated mothers. Since 1971 there have been extensive studies which document that the daughters of women treated with DES for threatened abortion during the first 17 weeks of pregnancy have a low but demonstrably increased risk for cancer of the vagina and cervix. These cancers appear around the time of puberty but in some cases do not come to clinical attention until several years after puberty. Currently, the incidence is estimated to be no greater than 3 - 4 per thousand daughters at the 95 percent confidence level but the incidence may increase as the daughters grow older. It should be pointed out, however, that all of these exposures occurred in mothers who were demonstrably pregnant at the time of treatment. This, then, differs markedly from post-coital treatment which is recommended to begin within 24 - 72 hours following unprotected intercourse. The significance of this statement lies in the fact that it is considered unlikely that treatment at such early time and for such a short period would create risks

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FRANK J. RAUSCHER, JR., Ph.D., Director of the National Cancer Program, National Cancer Institute, National Institutes of Health, HEW, made this statement before the Subcommittee on Health, Senate Committee on Labor and Public Welfare, and the Subcommittee on Administrative Practice and Procedure, Senate Committee on the Judiciary, February 27, 1975.

comparable to those associated with treatment for threatened abortion. The period during which the drug is administered precedes the critical stages of tissue and organ development and differentiation. It therefore seems improbable that the effects of DES administered at such an early time would produce effects similar to those induced by treatment for threatened abortion. One can only speculate as to what the former effect might be, if any, and how such effects would translate into human risks such as congenital diseases or cancer.

In summary, Mr. Chairman, I believe that current evidence suggests that the risk of causing cancer in the treated patient, the adult female, is extremely small. Considered against the emotional trauma experienced by a rape victim, including the fears and anguish over the possibility of pregnancy or of intervention procedures such as uterine scraping and frank abortion, the benefit would appear to greatly outweigh the minimal risks involved. It is my feeling that physicians who have responsibility for treating "real" emergency pregnancies should not be deprived of what may be a useful medical tool, particularly so since there is a considerable accumulation of evidence which indicates the risks to the patient are small and, to date, undetected despite the long and wide use of DES.

And, finally, Mr. Chairman, if I may just comment in synopsis, I recommend and the National Cancer Institute supports the position that DES not be used in animal feed if residues result, that DES not be used routinely as a post-coital drug, and that its use be confined to victims of rape, incest, and other illnesses, or illnesses which could be life-threatening following pregnancy. Finally, that its use for this purpose be withdrawn if it continues to be used for non-emergency purposes.

The Influence of Tobacco Smoke on Indoor Atmosphere

I. Schmeltz, Ph.D., D. Hoffman, Ph.D. and E.L. Wynder, M.D.

Abstract by Edward J. Bernacki, M.D.

Cigarette smoke contains a number of constituents which are both acutely and chronically harmful to man. Polynuclear aromatic hydrocarbons, n-nitrosamines and the arylamines are established animal carcinogens. Carbon monoxide and nicotine are physiologic cardiorespiratory toxins and may be implicated in the production of atherosclerosis. These agents have been shown to affect smokers and, in most cases, produce morphologic alterations proportional to the amount of toxin contained in the cigarette.

In assessing the potential hazard of cigarette smoke to non-smokers, work in three areas was reviewed:

(1) The measurement of the levels of various constituents of cigarette smoke in confined environment, and the determination of the factors affecting these levels;

(2) The measurement of the extent of absorption of these constituents by non-smokers and;

(3) The relationship between passive inhalation of smoke constituents and the production of adverse health effects.

It was shown that sidestream smoke produced by a cigarette contains a greater concentration of hazardous toxicants than mainstream smoke (that portion emerging from the butt end of the cigarette during puffing). Quantitative measurements of carbon monoxide, nicotine and benzo [a] pyrene content in various confined places such as cars, rest rooms, and submarines were reviewed. The atmospheric concentration of these constituents depended, to a large extent, on the adequacy of exhaust ventilation, room size and the amount of smoke produced. Only one agent, carbon monoxide, under extreme conditions, was shown to exceed the recommended safe concentration.

The respiratory uptake of carbon monoxide and nicotine was found to be significantly lower in nonsmokers than smokers in polluted confined spaces. However, carboxyhemoglobin levels in a number of the studies cited approached 3%; a level at which subtle perceptual alterations occur.

Because of the low levels of exposure, the hazardous effects of passive smoking have not been demonstrated except in children, where an increased incidence of respiratory ailments has been noted.

Continued epidemiologic work was advocated to determine the hazardous effects that low dose cardiorespiratory toxicants, such as nicotine and carbon monoxide, have on individuals already compromised by myocardial injury or emphysema.

DR. EDWARD J. BERNACKI, Corporate Medical Director, The Torrington Company, prepared this abstract from the article in *Preventive Medicine, 4,* 66-82 (1975).

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CSMS ANNUAL AWARDS

Past Presidents Award

David A. Grendon, M.D., left, of Sharon, receives the Silver Revere Bowl honoring him as Past President of CSMS. James H. Root, Jr., M.D., retiring President, makes the presentation.

Passing the Gavel

Guy W. Van Syckle, M.D., of Danbury, right, becomes the new President of CSMS as he receives the gavel from retiring President James H. Root, Jr., of Waterbury.

Fifty Year Membership Award

Dr. Root congratulates five fifty-year members. Left to right, Drs. Anthony W. Battista, New Haven; Max H. Ruby, Waterbury; Theodore S. Evans, New Haven; Samuel B. Rentsch, Derby; James C. Fox, Jr., West Hartford; Others not present were: Drs. Edward P. Allen, Orange; Lloyd L. Maurer, Woodbridge; Owen L. Murphy, Simsbury; Charles W. Nichols, Wellfleet, Mass. and Nathan R. Tolk, Fairfield.

AMA Education and Research Foundation Award

Lawrence Pickett, M.D., right, Associate Dean of Clinical Affairs, Yale University School of Medicine, receives check for $3,440.03 from Dr. Root.

Carl F. Hinz, right, Associate Dean, University of Connecticut School of Medicine, also receives an AMA-ERF check for $4,283.06 from Dr. Root.

SUMMARY OF PROCEEDINGS

HOUSE OF DELEGATES—ANNUAL MEETING

Hartford, Connecticut—April 30, 1975

Reports and Addresses

The House received reports, addresses and/or remarks from the President, the Secretary, the Treasurer, the Council, the standing Committees, Representatives and Advisors, the President of the Woman's Auxiliary to CSMS, the COMPAC Board of Directors, and delegates from the state medical societies in Maine, Massachusetts, New Jersey, Rhode Island and Vermont. At luncheon, awards were made to members who had completed 50 years of membership. At the Annual Dinner of the Society, held on April 30, the incoming President, Guy W. VanSyckle, Danbury, made his inaugural address; and William Y. Rial, Swarthmore, Pennsylvania, Vice-Speaker of the AMA House of Delegates, was the guest speaker. The addresses of James H. Root, Jr., Woodbridge, retiring President, and Dr. VanSyckle are published at the conclusion of this summary.

Election of Officers and Others

With minor amendment, the House voted to approve the published report of the Nominating Committee (the Council). The CSMS officers elected were:

President: Guy W. VanSyckle, Danbury.
President-Elect: Hilliard Spitz, New London.
Vice-President: Isadore S. Friedberg, Newington.
Secretary: Louis C. Backhus, Waterbury.
Treasurer: Carl W. Johnson, Thompsonville.
Speaker of the House: Timothy F. Nolan, Greenwich.
Vice-Speaker: David A. Grendon, Sharon.
Delegate and Alternate Delegate to AMA (1/1/76 - 12/31/77)
  Orvan W. Hess, New Haven (D).
  Andrew J. Canzonetti, Waterbury (A).
Councilor-at-Large: James H. Root, Jr., Woodbridge

Presentations and Awards

Presentation to Retiring President: In recognition of his high standard of performance as President of the Society during 1974-1975, James H. Root, Jr., Woodbridge, received an engraved silver bowl and a past president's pin. These presentations were made by David A. Grendon, Sharon, Chairman of the Council.

Presentation to Incoming President: At the Society's Annual Dinner on Wednesday, April 30, an engraved gavel, symbolic of the office, was presented to Guy W. VanSyckle, Danbury, by James H. Root, Jr., Woodbridge, retiring President. Dr. Root also administered the inaugural oath to the incoming President.

AMA-ERF Grants: Provided by the American Medical Association's Education and Research Foundation, unrestricted grants were awarded as follows:

To the Yale University School of Medicine—$3,441.03. Accepted for Yale by Lawrence Pickett, Associate Dean of Clinical Affairs.

To the University of Connecticut School of Medicine—$4,283.06. Accepted for U.Conn. by Carl F. Hinz, Associate Dean.

These presentations were made jointly by Mrs. Norman Barker, AMA-ERF Chairman, Woman's Auxiliary to CSMS and the President, Dr. Root.

AMA Certificate of Accreditation for Continuing Medical Education Programs: On recommendation of the CSMS Committee on Continuing Medical Education, the AMA Council on Medical Education issued certificates of accreditation for CME programs being conducted at the following Connecticut hospitals: Milford Hospital, Milford; Middlesex Memorial Hospital, Middletown; and Bridgeport Hospital, Bridgeport.

Louis H. Nahum Memorial Award for Medical Writing: Established by the Council in 1973, the recipient this year was James M. Burke, Manchester, Connecticut. Mr. Burke is a first year student at the University of Rochester School of Medicine and is also a student member of CSMS. In addition to receiving a placque and a check in the amount of $100, Mr. Burke will have his winning paper published in an early issue of *Connecticut Medicine.*

Principal Actions Taken

Continuing the procedure established several years ago, items of business calling for action to be taken by the House of Delegates were heard by Reference Committees. All items of business not calling for specific action by the House were accepted directly for filing (as information). Based on the reports of the Reference Committees the following actions were taken:

Continuing Medical Education

The House of Delegates recognizes the importance of continuing medical education as incorporated in the Society's original Charter and supports the activities of its Committee on Continuing Medical

Education. The House recommends that the CSMS Committee on Continuing Medical Education establish standards for and promote Continuing Medical Education and that each component county medical association implement and document this continuing education (in accordance with the CME Committee standards).

Professional Liability

(1) The House of Delegates directs the CSMS Committee on Professional Liability:

  (a) To undertake a broader education of physicians as to the causes of malpractice actions through the joint efforts of the carriers and the component county medical associations; and

  (b) To utilize illustrative cases already adjudicated for educational purposes through either *Connecticut Medicine* or other CSMS and/or county association publications.

(2) The House of Delegates endorses the action of the CSMS Council which proposed that a Commission or Committee to study medical professional liability in Connecticut be established by the General Assembly or the Governor. The House recommends that, in addition to public, legal, hospital and legislative members, the membership of such a Commission or Committee include, at least, the President of the Society, the Chairman of the Council and the Chairman of the Committee on Professional Liability.

(3) The House of Delegates directs that the actions recorded under (1) and (2) above be referred to the CSMS Committee on Professional Liability for guidance and implementation, along with other materials submitted to Reference Committee No. 2, and that the Committee on Professional Liability submit a subject progress report to the next meeting of the House of Delegates.

Committee on VD Education and Control

The House of Delegates directed that the Committee on Venereal Diseases Education and Control be abolished and assigned the functions of the abolished committee to the Committee on Public Health.

Committee on Professional Liability

The House of Delegates directed that the present limitation of committee membership to 14 members be abolished and that the chairman and co-chairman of each of the four Claims Review Panels, by title, be included as regular members of the committee during their tenure in office.

Committee on Maternal Morbidity and Mortality

The House of Delegates directed that the present limitation of committee membership to 24 members be abolished.

AMA Health Insurance Form

The House of Delegates urged the use of the AMA Health Insurance Form as the standard claim form suitable for submission to third party payors for reimbursement for professional services rendered to patients by CSMS members, and to urge all third party payors in Connecticut to adopt the subject insurance form for their use and accept it for claims of reimbursement filed by physicians. Further, the House directed the CSMS Committee on Third Party Payments to continue to negotiate with Connecticut third party payors for the purpose of establishing universal use and acceptance of the subject insurance form.

Resolution Commending Regional Red Cross Blood Program

The House of Delegates adopted a subject resolution as follows:

RESOLVED: That the House of Delegates of the Connecticut State Medical Society commend the Regional Red Cross Blood Program for the outstanding leadership and success demonstrated during its first twenty-five years of service and pledges continued support of and participation in the program in conjunction with the Connecticut Hospital Association, the Red Cross (Local and National), the American Association of Blood Banks and the people of our state.

The Connecticut Ambulatory Care Study

The House of Delegates directed the CSMS Council to:

(1) Continue to maintain and exert responsible supervision over all facets of the CACS.

(2) Assume responsibility for the security of all data obtained by the CACS.

(3) Urge the Advisory Committee to the CACS to explore every source for funding of the completion of the cost-of-service comparison portion of the project (that was originally planned).

Supplemental Reports of the Treasurer

The House of Delegates requested the Treasurer of the Society to prepare and submit at meetings of

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the House of Delegates an up-dated financial report which will bring to the attention of the House any significant changes in the financial status of the Society which have occurred since publication of the regular reports of the Treasurer that appear in the Delegates Handbook for meetings of the House.

Proposed "Yale Surgical Group" Plan
Yale-New Haven Hospital

Having been apprised of the general nature of the proposed subject plan, the House of Delegates directed the Council to remain vigilant to the Society's previously adopted policy concerning open staff privileges based upon proper credentials and, further, to investigate and study the proposed "Yale Surgical Group" Plan and to take such appropriate actions as will tend to preserve competition, a pluralistic system of medical care delivery, the private practice of surgery and free choice of physicians by patients.

Amendment to By-Laws Re
House of Delegates Procedure

The House of Delegates adopted an amendment to the By-Laws (Article V—House of Delegates; Section 12—Procedure, Paragraph 3—Resolutions), the purpose of which is to establish earlier deadlines for the submission of resolutions, reports and similar items of business for consideration by the House of Delegates and thus minimize the number of such items of business to be considered by the delegates without their having had opportunity for prior study.

ADDRESS OF THE PRESIDENT

James H. Root, Jr., Woodbridge

As you know, I had six major objectives this year.

The first of these was to see the establishment of the Connecticut Medical Institute (CMI), which would ultimately provide for peer review throughout the state. Its short-term objective is to act as a technical resource center for the four PSROs in the state. This task it is performing well. Therefore, the first objective has been accomplished.

My second objective was to establish successfully each of the PSRO organizations in the state as ongoing entities. This also has been achieved.

The third objective was to wind up the Connecticut Ambulatory Care Study. This has been riddled with delays and financial hardships. However, I am told that the project will be completed sometime in July.

The fourth objective was to work on getting at least minimum standards of health care into every health care insurance contract sold in Connecticut. This project is far from complete, but the Third Party Payments Committee has been working on the problem. The latest achievement of the committee has been to put together a document informing people what they should have in health care insurance contracts. I am hopeful that this document will be approved by the Council prior to this meeting. We are on the right track in this effort.

The fifth objective was to improve our efforts in the field of continuing medical education. This has been the most frustrating effort of all.

More and more, over the last few years, the accountability of the medical profession to the people—and, through the people, the government—has been growing by leaps and bounds. This matter of accountability is here to stay. Like it or not, it is part of the mind-splitting social revolution that is taking place.

Eventually, a mandated recertification will be upon us. Already the Academy of Family Practice has taken steps for recertification by the use of continuing medical education credits. Other specialty societies are beginning to follow suit. The joint accreditation people have mandated that hospitals show firm evidence of continuing medical education. Many hospitals mandate this as a requirement of staff privileges.

Either we shall be recertified via the CME credits route or via re-examination, as has been suggested by certain liberal members of Congress.

Yet certain of our component County Medical Associations seem to want no part of the action in formulating the direction of this movement. They are so afraid of the word "mandatory" that they almost literally convulse when they hear it.

My final statement on this problem is that if they will not mandate credit certification for themselves, they are apt to have re-examinations rammed down their throats by the federal government.

Therefore, I recommend that, today, the House of Delegates advocate most strongly to the Society's component Associations that continuing medical education through the accumulation of continuing medical education credits be mandated as a contingency of county membership.

The sixth major project that I proposed be undertaken was to enhance the effort being made in health education for the public—particularly by education for health in the school system, kindergarten through senior year high school.

In this endeavor, the Woman's Auxiliary, under the leadership of Mrs. George Roch, has been particularly helpful.

Also, in support of this goal I appeared earlier this year before a special committee of the Legislature. This was very informal and resolved into a three-way discussion between the committee, a representative of the State Department of Education and myself. There is already in the statutes a mechanism by which this can be done but it is vague and has few teeth in it.

It was finally decided that the best way to approach the problem was to form a joint committee of representatives of the Society and the Department of Education. This committee would report back to the Legislature. It was further decided by our Council that the committee be a tripartite one including the Society, the Department of Education and the Department of Health.

Due to the change in state administration, we have delayed implementing this until the dust had a chance to settle. In a recent discussion with Rep. Natalie Rapoport, of Waterbury, she expressed hope that this committee would be activated soon. At the time of this writing, Staff was to begin to initiate action on this matter.

There have been other things of great importance that have transpired this year. The professional liability crisis is one of those.

We are working on this at both the state and national levels and I have little of a positive nature to report on at the moment. Perhaps Dr. Fabro (or Dr. Deren, if he is here) could give us a better update.

The Legislative Committee and the Society's new lobbyist, Mr. Philip R. Dunn, of Hartford, have spent a lot of time and have done an excellent job.

Dr. Bradley's Cancer Coordinating Committee has done a good job.

Dr. Weber's Committee on Statewide Planning has come up with eleven recommendations to correct deficiencies in medical care in Connecticut.

Dr. Fabro has given much of himself in upgrading the quality of the Journal. We now have one of the best medical journals in the country and should be proud of it.

Dr. Cramer has served us well as the Society's representative on the State Commission on Hospitals and Health Care.

The list goes on and on and I simply cannot here elaborate on all of you who have worked so hard and who have served the Society so well. All I can do is thank you all from the bottom of my heart—and this includes the Staff as well.

Before closing I would like to philosophize briefly about the future.

As my term of office draws to a close, I think I can see certain trends which will be brought about inevitably in the future of American society. We are coming face-to-face directly with what Alvin Tofler calls "future shock." The people will have their say, whether their say reflects wisdom or misunderstanding—and one thing the people want is accountability on the part of the medical profession. We have behind us the experiences of other countries which have followed this path. Hopefully we can learn from their mistakes. We should know by now that it is impossible to keep government out of medicine entirely. Those who believe differently are doomed to be disillusioned.

Our problem is to know how to act and react in order to preserve and improve the quality of medicine as it exists today, and, at the same time, give people the availability of medical care and education for health to know what to ask of the medical profession. We must cut cost where it is possible to cut cost without interfering with quality. We must insist and continue to insist that the quality of medical care be the responsibility of physicians. We must have input into both laws and regulations. Showing a willingness to cooperate with the law will give us an outside chance at least to maintain quality and to establish more input into future laws and regulations. We must do this through wisdom and statesmanship—not through emotional and rhetorical temper tantrums. This does *not* mean that we fight any the less for quality; it *does* mean that we fight with our minds rather than our emotions to keep control of those things which are sacred to us in the medical profession.

It is very hard to ride the punches sometimes but let us not, above all else, lose our cool.

Ladies and gentlemen, it has been a pleasure to serve on your team and I sincerely appreciate the opportunity to have been your leader during the past year.

Thank you very much.

INAUGURAL ADDRESS OF THE INCOMING PRESIDENT

Guy W. Van Syckle, Danbury

There is an ancient Chinese curse that begins: "May you live in interesting times . . . "

This evening I plan to talk about some of the themes and problems that make these "interesting times"—the climate and environment in which the society and your new president will operate.

The national phenomena now referred to as "consumerism" will continue to influence and modify the medical and health care scene. To believe that the present interest in medical affairs is merely fallout, or a passing fad, is pure delusion. Potential Naders and Myersons are everywhere and many are structured into the government at federal, state and local levels. Health care as a right, together with the goal of equal access to quality health care at reasonable cost, has been accepted by both parties and is embodied in the recent legislation. The clamor for evidence attesting to the continuing competence of physicians continues unabated. Recent actions, by state legislatures and medical societies, demanding evidence of continuing medical education as a condition of membership or annual licensure is further evidence of the response to this pressure. Of course, we must respond positively, but let us respond by insisting that the proposals be rational and offer hopes for improving medical care rather than merely setting arbitrary parameters for the evaluation of postgraduate education.

Since the most efficient learning has always occurred at the problem interface—in this case the patient and his illness—the learning should take place at the local level. It should also be carried out locally or the cost will be prohibitive. This would also allow the learning to be continuous, patient oriented, and suited to the individual physician's needs. A program such as this would not result in any disruption of practice patterns and would recognize that our educational requirements vary from physician to physician and community to community.

Whatever method of testing is used, it must represent a meaningful measurement of physician competence at the patient interface. We must measure what the physician does, not what he professes to do or what he is capable of doing. Naturally, physicians are concerned regarding any activity that threatens their professional career and livelihood. We would all be unalterably opposed to the revocation of licensure or certification except in those cases of demonstrated unremitting incompetence. Whatever the method, whoever the tester, the goal must not be to punish poor performance but to identify the practice deficiencies and correct these by education and retraining.

The most recent federal legislation indicates that the national government has assumed the full responsibility for developing a system of high standards of comprehensive care for all citizens. In a larger sense, the government has always been the arbiter between the needs and expectations of its citizens and those of the providers. This role has been thrust upon the government or else assumed by the government because no more satisfactory agency has been developed to be sufficiently responsive to the needs of both parties.

Understanding does not help my pessimism. I have never accepted the thesis that our national problems in the social area could be solved by an infusion of federal monies and multiple layers of bureaucratic control. Previous disasters in the war on poverty, together with the ongoing disasters in public housing and education, offer little cause of optimism. Federal intervention in agriculture, mass transportation and the maritime industry hardly offer any justification for extension of the federal role. The actual management records in the Post Office, Indian Affairs, and Veterans Administration speak for themselves. What optimism persists is based on my belief that the entire practice of medicine will not be totally governmental in the future but will evolve along the hybrid lines of most Western European countries. At best, however, we will be left with the same conflict we see in busing—the confusing assignment of the federal mandate, using a state formula, for a problem which requires a local solution.

Three pieces of legislation will do much to modify our parameters in the year to come: P.L. 92-603 containing the PSRO section; The Emergency Systems Act of 1973; and finally P.L. 93-641, The Health Planning and Resources Development Act of 1974.

The PSRO legislation, for the first time, holds doctors publicly accountable for the quality, medical necessity, efficiency, and cost effectiveness of the health care they provide. I have never supported the law with any enthusiasm for many reasons. It does nothing for problems of access, non-uniform distribution of physicians, primary care, or home care. As the problems of definition of just what constitutes quality care become more apparent, particularly in the absence of a credible data base, we will be left with what is basically a cost control program. And this is just the area in which we have neither expertise nor experience! I am also concerned that the profession may be placed in an adversary role with their hospitals. The new utilization review regulations dictating implementation of a comprehensive hospital based review program may well duplicate the PSRO review. If so, it cannot fail to undermine the PSRO authority. The delegated review function which has been accepted by the overwhelming majority of PSRO organizations has yet to be funded. The reimbursement mechanism by which the hospital will recover the cost of delegated review has not been resolved. Direct reimbursement would certainly be to the hospital's advantage. If, however, the hospitals had to appeal to state rate setting commissions for reimbursements, they might well pass and choose not to seek delegation.

The delegated review function also encroaches on the question of hospital certification and accreditation by other organizations. Question—would failure of hospitals to receive full PSRO delegation jeopardize Joint Commission accreditation? Also, the question of hospital liability has still not been delineated either by statute or regulations, and in the interim various interpretations are being rendered in the courts. I cannot believe that Hospital Boards, who may well be held corporately responsible for the quality and outcome of medical care rendered in their hospitals, would ever support or accept a program for quality assurance that is not controlled and directed by their own organizations.

In the Emergency Medical Systems Act of 1973, consumerism referred to earlier is, for the first time, specifically legislated into hospital and medical practice. For the first time, lay participation is mandated in planning and implementation of the operational policy of any emergency care system developed under the aegis of this bill. The public should benefit from a nationwide corps of ambulance technicians trained to render excellent medical care at the scene of the accident or injury and subsequent transportation to the hospital. Financial benefits will undoubtedly accrue to those organizations engaged in health care education and service—hospitals, medical schools, and residency programs in emergency medicine.

The pattern of emergency care can be predicted to continue to change and the promise and future of primary care as a specialty and activity within the hospital confines is assured. Conflicts can also be predicted between the new breed of doctors and health care professionals as they encroach on the "territorial rights" of older, more established providers of emergency care. The mandated categorization in the bill will significantly affect staff membership, further adding to physician unhappiness.

And now for a few tentative remarks regarding the new planning bill, P.L. 93-641, which will replace Comprehensive Health Planning, Regional Medical Programs, Hill-Burton and Experimental Health Service. I say tentative because to date there appears to be no consensus regarding this legislation. Anyone can read into the bill what he wishes or alternately read what he fears. Descriptions of the bill recall the old story of the three blind men describing the elephant. In any event, one can make some reasonable guesses and predictions regardless of how the bill is defined or implemented. The Health Service Agencies in Connecticut, whether one or many, will be very powerful in the affairs of medical practice. All expenditures of federal funds for health care activities will be under the scrutiny of a governing board consisting of a majority of public members, with only token practicing physician representation, having little or no opportunity for significant input. The bill designates widespread planning authority and regardless of what form the agency takes, the lines of authority go to Washington and not to state health authorities. In addition to planning regional health programs, the HSA's will control the acquisition of federal funds in their respective areas. Funds automatically awarded to the states on a formula basis will be excluded but all other federal funds appropriated under ongoing programs will require HSA approval. This requirement for approval applies to grants and contracts "for the development, expansion, and support of health services, manpower, and facilities." Simply put, HEW will not pay any bills submitted to it for health care activities in an HSA region unless they have been approved by the governing board of the agency. And that is what I call power!

While giving the superficial appearance of local control, most agencies will probably end up as non-profit, private corporations with no responsibility to the voters. Although they will operate at some distance from the Potomac, predictable problems will arise, and bureaucratic convenience will ensue. In the final act more and more decision making will occur in Washington and the HSA will lose most, if not all, of their independence.

Our most immediate and pressing problem is, of course, malpractice. Although our experience and present status compares favorably with the rest of the nation, their problems will soon be our problems. Spiralling awards as well as an absolute increase in the number of suits are occurring here as well as elsewhere. Fortunately our present insurance agreement runs until 1976 and there is no evidence to suggest that it will not be renewed.

Instead of bemoaning the present deteriorating "no win" state that exists, we should take this opportunity to effect rational changes that are long overdue. First of all I offer one admonition. The "contingent fee" is not going to be abolished—modified perhaps—but not abolished. The contingent fee is not limited to malpractice suits but applies to all personal injury suits. In addition, it has a long history of tradition and support on the basis that it allows the poor to obtain justice in court when he otherwise would be unable to afford legal aid. The public still favors an arrangement which allows it to sue without assuming risk or the cost of paying for legal services.

I would urge us to concentrate on three goals that offer a reasonable chance to lower premium cost. First, a ceiling must be placed on awards. Secondly, the statute of limitations must be more sharply defined and the same rules of evidence should apply to all parties. Other measures to be sought are coordination of benefits, screening panels, and compulsory arbitration.

Punitive measures should be eliminated, together with awards for "pain and suffering" unless specific loss can be demonstrated.

It is incongruous in all this furor and turmoil that so very little is known about the medical injuries themselves—how many occur each year, what kind they are, and how many can be prevented. The insurance companies should be able to extract this data from their files in the near future. Reducing the number of injuries is squarely within the scope of responsibility of the profession and the hospitals. Unless we can ultimately control the actual number of injuries, any proposed solution, no matter how complex or far reaching, will ultimately fail.

In all of this let us not forget the patient! Reforms are indicated in his behalf also. While costs and awards skyrocket estimates show that as little as sixteen cents of the premium dollar is recovered by the injured patient. The rest is consumed by court costs, legal fees, and a multiplicity of other charges before reaching settlement. It is also the patient who pays the direct and indirect costs of defensive medicine with money as well as with critical delays in treatment.

Finally, it would be very helpful in all of this if the public were made to understand that oftentimes the art of medicine is the art of balancing risks. In a certain sense, any diagnostic test or procedure is an experiment. We will never be able to guarantee the absolute safety of any therapeutic procedure nor the harmlessness of any diagnostic test.

Hopefully, in the next year we can begin to evolve substantial rapport with our state officials, particularly the Health and Welfare sections. Initial meetings are under way and these will be implemented. Our legislative efforts need increasing support from the membership. We must find some way to mobilize effectively and constructively the energy, drive, and talent that is present. Too often the Society seems to deserve the descriptive term, "a hot bed of apathy."

Because I believe the forthcoming year will see continuing radical changes, I would forego submitting a specific program of action. I would, instead, suggest a philosophy that will enable the Society to fulfill its role regardless of future happenings. I would urge us to concern ourselves only with those matters directly affecting the public good and which are statewide in scope. And because we have limited resources and political skills, we should save our efforts for those matters where there already exists a consensus for action and where that action has a reasonable chance of success. In this way we can maximize the public benefit and minimize physician discontent. We must continue to demonstrate by our actions that we are indeed, truly concerned regarding the medical care our grandchildren and their grandchildren will receive. We are not part of the problem—we are part of the solution!

In closing, and in order to maintain some perspective in all this, I would recall for you a saying attributed to John Galsworthy that I first heard as a college freshman in an introductory history course. What he said was: "Nothing is so sure to change as the status quo, and nothing so unlikely to arrive as the millennium."

AMA Continuing Medical Education Accreditation Awards

Receiving awards for their respective hospitals from Dr. Root, left, are Dr. Andrew Owens, Chief of Staff, Bridgeport Hospital; Dr. James Tierney of Milford Hospital and Dr. Joseph A. Donadio, Director of Medical Education, Middlesex Memorial Hospital. The presentation was made at the recent CSMS Annual Meeting.

FROM THE EXECUTIVE DIRECTOR'S OFFICE

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Summary of Actions
Council Meeting
Wednesday, May 21, 1975

Organizational Meeting

The President, Guy W. VanSyckle, called the organizational meeting to order. In his opening remarks, he touched on matters of ongoing importance—continuing medical education, malpractice problems, participation in health planning, etc.—and announced his intention to make recommendations to streamline and improve the procedural format and productivity of meetings of the Council.

Under the supervision of the President, elections were held for the offices of Chairman and Vice Chairman of the Council for 1975-76. Those elected were: Chairman—David A. Grendon, Sharon; Vice Chairman—Jerome K. Freedman, New Haven.

The organizational meeting was then adjourned.

Business Meeting
I. Attendance

Present in addition to the Chairman, Dr. D. A. Grendon, and the Vice Chairman, Dr. J. K. Freedman, were: Drs. VanSyckle, Spitz, Friedberg, Johnson, Backhus, Nolan, Root, Jr., Gardner, Hess, Bradley, Fabro, Granoff, Kamens, Rubinow, Ragland, Jr., James, Krinsky, Sonnen, Klare, McGarry, Beck, Robinson, Harkins, Mendillo, Eslami, Barrett and Bird.

Also present were: Mrs. Lindquist, Mr. Tomat, Mr. Sweeney and Dr. Richards.

Absent were: Drs. Cramer, Canzonetti, Magram and Dambeck.

II. Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of April 17, 1975, the correction of a typographical omission being noted under "Reports on Activities of 'Important Outside Agencies'," "(c)—Connecticut Cancer Center at Yale."

Life Memberships

It was VOTED to approve applications for Life Membership received from eligible Active Members as follows:

Tibor deCholnoky, 40 West Elm Street, Greenwich (F)—1/1/75
Barnet Fine, 70 Grove Street, Stamford (F)—1/1/75
William J. Neidlinger, 85 Jefferson Street, Hartford (H)—1/1/75
Frederick C. Redlich, 333 Cedar Street, New Haven (NH)—1/1/76
Fred Rosner, 2333 North Avenue, Bridgeport (F)—1/1/76
Homer B. Shoup, 131 Kings Highway North, Westport (F)—1/1/75
Howard T. White, 84 Live Oak Lane, Meriden (NH)—1/1/76
Carl Zelson, 71 Bennetts Farm Road, Ridgefield (F)—1/1/75

Date of Next Meeting

The Chairman set the date of the next *regular* meeting of the Council for Thursday, June 12, 1975.

II. Old, New and Special Business

Resignations, Appointments, Etc.

(a) *Alternate Delegates, Connecticut Health Association.:* It was VOTED to appoint as alternate delegates to CHAI: Kenneth F. Brandon, Hartford, and Guy W. VanSyckle, Danbury. The two delegates to CHAI, elected by the House of Delegates on April 30, 1975, are: Ralph M. Gofstein, Stamford, and Yale Gordon, West Hartford. In conjunction with this action, it was further VOTED that members who are appointed to officially represent the Society (as delegates and alternate delegates) will be reimbursed for any expenses incurred by carrying out their assignments.

(b) *CSMS Representatives, Acute Care Task Force, Commission on Hospitals and Health Care:* In compliance with a request received from the subject Commission, it was VOTED to ask the

BOOK REVIEWS

INFECTIOUS DISEASES IN OBSTETRICS AND GYNECOLOGY by G. R. G. Monif. First Edition. Edited by R. Burnell Clutz, 470 pp., with illustrations. Hagerstown, Maryland. Harper and Row. 1974. No price given.

Reviewed by John Grossman, M.D.

At a time when sub-specialty interest in obstetrics and gynecology is rapidly increasing, a formal systematic approach to the treatment of significant infectious disease problems has lagged woefully behind other advances that are being made. In part, more sophisticated antimicrobial technology is to blame. As the therapeutic armamentarium expands, we seem less concerned with the what and why of infection in women. Finding "the drug" too often short-circuits the clinical appraisal by thought and observation that made them possible in the first place.

Still more vexing are the increasing complexities of the subject. It is the very exceptional specialist—internist, gynecologist, neonatologist, or surgeon alone—who has the background to be fully informed. Monif and the fifteen contributing authors provide the necessary interdisciplinary breadth and depth to deal effectively with the entire scope of the subject. The format occasionally leads to somewhat overly narrow treatment of the material, for example, sterilization procedures for anesthetic equipment. Nevertheless, the product is consistently clear, thorough, and presents a concise rendering of current information in an imminently readable form. Above all, the text is a well thought-out working reference source with extensive selected biographies.

Ledger's section on anaerobic infections and the chapters on viral infection and vaccination in pregnancy deserves very careful scrutiny. These topics are assuming increasing importance today. They certainly were not issues of major emphasis in training programs a few years ago, and it is a pleasure to become clinically informed without plodding through the sophistication of specialized culture technique or virology.

Special comment should also be made about the excellent use of tables and charts. They are consistently informative, and in several instances they contain material not otherwise readily obtainable. The differential diagnosis of vulvar ulcers is excellent, and the table on the choice of antibiotics in pregnancy is even better. This is not for its tabulation of known fetal side effects, but rather for its detail concerning the less well-known feto-placental passage of these drugs—a very real and often neglected concern in proper obstetrical management.

The discussions of current controversial topics are consistently objective regarding their recommendations. Appropriately, the topics of nosocomial and superinfection are examined as they relate to the broader social issues. They are preceded by a detailed taxonomic treatment of separate organisms. It is indeed unfortunate that a comprehensive discussion of the prophylactic use of the antibiotics has been omitted, an addition that would have further enhanced the overall appeal and value of this fine book.

In the final analysis, the book treats new topics and old clinical axioms equally well. Its greatest strength lies in a meaningful reiteration of clinical common sense. Whether the problem is chorioamnionitis or pelvic abscess, it calls for informed, intelligent use of antibiotic therapy. Those critical of its apparent simplicity should consider when they, themselves, last obtained a gram stain before starting treatment! *Infectious Diseases in Obstetrics and Gynecology* should be required reading for all concerned with managing the diseases of women. The book admirably fills the long-standing void in clinical obstetrics and gynecology.

Pro-Banthīne®
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Indications: Pro-Banthīne is effective as adjunctive therapy in the treatment of peptic ulcer. Dosage must be adjusted to the individual.

Contraindications: Glaucoma, obstructive disease of the gastrointestinal tract, obstructive uropathy, intestinal atony, toxic megacolon, hiatal hernia associated with reflux esophagitis, or unstable cardiovascular adjustment in acute hemorrhage.

Warnings: Patients with severe cardiac disease should be given this medication with caution. Fever and possibly heat stroke may occur due to anhidrosis.

Overdosage may cause a curare-like action, with loss of voluntary muscle control. For such patients prompt and continuing artificial respiration should be applied until the drug effect has been exhausted. Diarrhea in an ileostomy patient may indicate obstruction, and this possibility should be considered before administering Pro-Banthīne.

Precautions: Since varying degrees of urinary hesitancy may be evidenced by elderly males with prostatic hypertrophy, such patients should be advised to micturate at the time of taking the medication.

Overdosage should be avoided in patients severely ill with ulcerative colitis.

Adverse Reactions: Varying degrees of drying of salivary secretions may occur as well as mydriasis and blurred vision. In addition the following adverse reactions have been reported: nervousness, drowsiness, dizziness, insomnia, headache, loss of the sense of taste, nausea, vomiting, constipation, impotence and allergic dermatitis.

Dosage and Administration: The recommended daily dosage for adult oral therapy is one 15-mg. tablet with meals and two at bedtime. Subsequent adjustment to the patient's requirements and tolerance must be made.

How Supplied: Pro-Banthīne is supplied as tablets of 15 and 7.5 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type vials of 30 mg.

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following to serve as CSMS representatives on the subject Task Force: Howard P. Serrell, Greenwich; Phillip A. Stent, Hartford; and Paul J. Gerity, New London.

(c) *Committee on Drug Abuse Education:* It was VOTED to accept the resignation of Charles E. Jacobson, Manchester, from membership on the Committee, and it was further VOTED to appoint Alice J. Turek, Manchester, to replace Dr. Jacobson as a Committee member.

Connecticut Ambulatory Care Study

Pursuant to instruction given to the Council by the House of Delegates (4/30/75), the following actions were taken:

(a) It was VOTED that the Council request the CACS, through the Committee on Statewide Medical Planning, to assure that the storage and physical control of the data obtained from the Study will be under the control of the Connecticut State Medical Society.

(b) It was VOTED that the Council request the Committee on Statewide Medical Planning to produce a plan which would open (make available) the data for subsequent studies, and to report such plan to the Council.

(c) It was VOTED that the Council request the Advisory Committee to CACS to explore every source for funding for the cost-of-service comparison portion of the Study that was originally planned, and to report to the Council on the results of such exploration.

Resolution re "Yale Surgical Group" Proposal

The House of Delegates (4/30/75) having directed the Council to remain vigilant to previously adopted CSMS policy re "open staff" and staff privileges being granted on the basis of proper credentials, and to "study and investigate a proposed 'Yale Surgical Group' plan" and to take such appropriate actions as will tend to preserve competition (among practitioners), a pluralistic system of medical care delivery, the private practice of surgery and free choice of physicians by patients," the Council VOTED to adopt a resolution outlining an action plan as follows:

WHEREAS: It is reported that a "Yale Surgical Group" has been proposed at the Yale-New Haven Medical Center; and,

WHEREAS: There seems to be considerable uncertainty as to the immediate and future duties, privileges, restrictions, remunerations, contributions, etc. of the full-time and part-time faculty; and

WHEREAS: It seems advisable in the interest of patients and physicians alike that plans be discussed and positions outlined openly in advance rather than *ex post facto;* therefore be it

RESOLVED: That the Council of the Connecticut State Medical Society look with great favor on any desire by Yale-New Haven Medical Center and/or Yale University Medical School to develop a mutual understanding and cooperation with the Connecticut State Medical Society and its members; and be it further

RESOLVED: That a genuine desire for such understanding and cooperation can be well expressed by members of the faculty of the Medical School becoming members of the State Medical Society and participating in its activities; and be it further

RESOLVED: That communication must be a two-way process and both town and gown must seek to appreciate the feelings, ideas and goals of the other, in order to develop a proper amalgamation for the benefit of the patients in New Haven and all over Connecticut; and be it further

RESOLVED: That the Council reaffirms the principle of open hospital staffs previously supported by the House of Delegates, which principle provides patients with the right to be treated by physicians of their choice in the hospital of their choice within the competence of those physicians; and be it finally

RESOLVED: That a copy of this Resolution be transmitted to the incoming Chief of the Department of Surgery with copies being sent to the Dean of the Medical School, the President of the University and a number of other interested and/or concerned parties.

During the discussion which preceded the adoption of the above-cited resolution, the Council VOTED to accept for filing a "package" of correspondence furnished by Jerome K. Freedman, New Haven, that offered the views of a number of knowledgeable New Haven area physicians as to the current status of the "Yale Surgical Group" proposal. In the main, the views offered indicated that the "Group" proposal has been shelved within the Yale University Medical School - New Haven Hospital complex and that no further consideration of same is being contemplated at the present time.

Professional Liability Insurance

It was VOTED to advise Governor Grasso of the House of Delegates' (4/30/75) recommendation that on any commission or committee created by the General Assembly or the Governor, the Society should have at least minimum representation as follows: The President of the Society, the Chairman of the Council and the Chairman of the CSMS Committee on Professional Liability. Further, it was VOTED to convey to the Governor the urgency of attempting to deal with the over-all problems of malpractice insurance, making note of the crisis situations which have developed in New York, Maryland, California and elsewhere throughout the United States.

It was further VOTED that the Chairman of the Council call a special joint meeting of the Council and the Committee on Professional Liability within thirty days from 5/21/75 or as soon as definition becomes available of the action of the General Assembly designed to start dealing (by study and legislative recommendation) with the problems. The purpose of the joint Council-Committee on Professional Liability meeting will be to attempt to define an official CSMS position on the problems which have developed in the field of professional liability insurance and to document recommendations for legislative actions to submit to the Governor or to a study commission or committee to be created by the General Assembly.

Report—Task Force on Primary Care, Commission on Hospitals and Health Care

The Council was joined by Howard J. Wetstone, Hartford, chairman of the subject Task Force, who presented a summary of some of the findings and conclusions of the study of primary care which had been made under the auspices of the Commission. The report of the Task Force will be made to the Commission formally on May 27, and, thereafter, will be made public. The over-all conclusion of the study appeared to be that primary care resources and availability are generally adequate in most parts of Connecticut but that there is a pressing need for additional resources in central city and more rural areas. By arrangement with the Editor of *Connecticut Medicine,* it is planned to publish cogent passages and/or excerpts from the report in the Journal later this year, and the Council VOTED to approve such publication under the Editor's supervision. Following a period of questions and answers, the Council VOTED to thank Dr. Wetstone for his presentation and to commend him and the members of his Task Force for a most difficult job well done. A copy of the Task Force's report was filed with the Council for future reference.

Request for CSMS Assistance to Woman's Auxiliary re Membership Recruitment

It was VOTED to accept for filing a letter received from Mrs. Mehdi S. Eslami, Vice President in Charge of Auxiliary Membership Recruitment, which requested Council consideration of several proposals she advanced which called for CSMS participation in Auxiliary recruitment efforts; also, a Staff-prepared "fact sheet" which outlined several problems of logistics that would be encountered if CSMS membership dues statements were to be used as a vehicle for collecting Auxiliary membership dues. Expressing a desire to cooperate with the Auxiliary leadership in this matter, the Council VOTED that "a member of the Council be appointed as a representative of the Council to work with CSMS Staff and the Membership Chairman of the Woman's Auxiliary to prepare and submit to the Council, for approval and implementation, a report on this matter. It was further VOTED to appoint Morris A. Granoff, New Haven, as the Council's representative for the purpose stated above.

Communication—Chairman, Committee on Third Party Payments

It was VOTED to accept for filing a letter received from S. Pearce Browning, III, chairman of the Committee on Third Party Payments, in which he informed the Council that he had written personally to the Secretary of HEW asking that the period allowed for comment on new regulations for allowable Medicare payments (published in *Federal Register,* 4/14/75) be extended to at least 60 days and, preferably, to 90 days. Dr. Browning suggested that Council might act to express opposition to the new regulations and urge the Secretary of HEW not to implement them. Having received from Staff and other sources an analysis of the proposed regulations, and having concluded the effect of the regulations would be to re-impose "price controls" on physicians and physicians only, the Council VOTED to inform the Secretary of HEW, Connecticut's two Senators and six Representatives that the Council strongly disapproves of such unrealistic and unfair controls being placed on physicians and urges that the proposed regulations be withdrawn.

Presentations—Medical Student Financial Aid Fund Grants for 1975

The Council was joined by Dr. Howard Levitin, YUSM Dean for Student Affairs; Mr. Attilio Granata, a YUSM medical student; Dean Robert U. Massey, UConn Medical School; Mr. Joseph Rosenblatt, a UConn medical student. Also, by Mr. Louis Kaplan, Assistant to Dean Berliner of YUSM. Presenting the subject CSMS grants for 1975 in the amount of $4,000 was Guy W. VanSyckle, President. Receiving and responding to the presentations were: for YUSM—Dr. Levitin; for UConn—Dean Massey.

Request—Committee on Accident Prevention and EMS

It was VOTED to accept for filing a report of the Committee which dealt with "proposed procedures for compliance with law enforcement agencies" with respect to the drawing of blood by a physician for alcohol determination from a person being detained by such agencies for suspected drunkenness. The report contained a suggested protocol to be followed by the physician in three different situations (conscious person, unconscious person, dead person) and requested authorization from the Council to consult with CSMS legal counsel regarding the legality of said protocol. After brief discussion, the Council VOTED to *not* approve such authorization and suggested that the Committee might obtain the legal opinion desired from the State's Attorney General via the Commissioner of Health, Dr. Lloyd. It was recognized that only an official or an agency of the State may call upon the Attorney General for opinions of this nature.

Communication—HCMA

It was VOTED to accept for filing notice that the Hartford Association has appealed to the AMA Judicial Council the rulings of the CSMS Judicial Committee on appeals taken by an expelled HCMA member against disciplinary decisions of the Association. Response to the subject HCMA appeal from the AMA Judicial Council is awaited.

Communication—MCMA

It was VOTED to receive as information notification from the Middlesex County Medical Association that, at the MCMA annual meeting on 4/10/75, membership approved a statement that "this Association does not endorse the (HEW) concept of (hospital) admission certification."

Recommendations—Committee to Study Perinatal Morbidity and Mortality

It was VOTED to accept for filing the minutes of the Committee's 4/14/75 meeting in which several requests for Council approval were made. On a request for Council approval of the Committee submitting material for publication in the Journal, it was VOTED to inform the Editor that the Committee has an interest in supplying materials for such publication. On a request for approval of Committee-recommended "suggestions for minimal facilities necessary to deliver babies," it was VOTED to approve the "suggestions" as presented by the Committee and to send a copy to the Commissioner of Health as information.

Activities Report—Connecticut Medical Institute, Inc.

It was VOTED to receive as information a subject report furnished by the Staff of CMI, Inc. In brief, CMI has: participated in state meeting relative to the implementation of P.L. 93-641; been involved in the development of prototype reports and profiles necessary for the monitoring and evaluation by the PSROs of hospital review activities; developed a model "Memorandum of Understanding" for consummating agreements between PSROs and hospitals regarding utilization review as called for by the PSRO Law; jointly sponsored (with the Connecticut Hospital Association) training seminars for Utilization Review and Medical Audit to be attended by hospital trustees, administrators and physicians.

Request for Opinion—T. Stewart Hamilton, Hartford

The Chairman of the Council informed the members that, in a telephone conversation, Dr. Hamilton had expressed an interest in receiving the opinion of the Council on a matter under study by a "search committee" which he serves as chairman. The matter under study is that Dr. John W. Patterson, Farmington, is resigning the posts he holds at the UConn Medical-Dental Center and at the University of Connecticut at Storrs, and the search committee is seeking opinions from a number of sources as to whether Dr. Patterson should be replaced in both posts; whether replacement in one combined post should be advocated; or whether no replacement is needed in either of the two posts. It was VOTED to thank Dr. Hamilton for giving the Council opportunity to express an opinion in this matter, but to inform him that the members of the Council feel that they do not have sufficient factual information on which to make a meaningful subject judgment and that they are content to rely on the judgment of the members of the search committee in resolving the question raised.

Presentation—National Commission's Report on Human Experimentation

The Council was joined by Dr. Robert Levine, Professor of Medicine at the Yale University School of Medicine, who presented a summary of the findings and conclusions contained in the report of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. In making his presentation, Dr. Levine filed with the Council copies of three documents as follows: (a) Raised Committee Bill No. 8419 (1975 General Assembly)—An Act Concerning Human Experimentation; (b) Reprint from (?) publication, titled: "Fetal Research—Ethics

Commission Votes to End Moratorium;" (c) A summary of the National Commission's "Deliberations, Conclusions and Recommendations."

The principal point that Dr. Levine made to the Council was that the report of the National Commission constituted a very strong argument against the enactment of Bill No. 8419 by the 1975 Connecticut General Assembly (a bill which would, in effect, prohibit experimentation/ research not only on aborted "fetuses" but also on newborns of all gestational ages and even children up to the age of majority.

In response to Dr. Levine's presentation, the Council VOTED to transmit to the chairman of the CSMS Committee on Legislation a copy of each of the documents filed by Dr. Levine and to instruct the Committee to prepare a position paper in opposition to legislative bills of the type of Bill No. 8419, based on such documents, and to take such strong legislative action in opposition to the prohibition of experimentation by statute as may be indicated at the present session of the Assembly (Bill No. 8419 is presumably "dead," as far as can be determined) and at future sessions if bills of the same type are re-introduced.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on May 21, 1975. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

In Memoriam

Anderson, James T., University of Pennsylvania, 1943. Dr. Anderson was a practicing pediatrician in the Windham area since 1948. He served as chief of staff of Windham Community Memorial Hospital from 1965 to 1967, and was physician to the Windham School system for several years. He was a veteran of World War II, serving as a captain in the Army Medical Corps. He was a member of the Windham County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Anderson died May 6, 1975, at the age of 57.

Baker, Asher L., Medical College of Virginia, 1928. Dr. Baker was a practicing psychiatrist in the Middlesex area since 1948, retiring in 1972. He was a member of the Middlesex County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Baker died in Sheffield, Mass., at the age of 72.

Goff, Charles W., University of Illinois, 1923. Dr. Goff was a former orthopedic surgeon and consultant at St. Francis Hospital and Newington Children's Hospital. He also consulted for several other area hospitals and the National Foundation of Infantile Paralysis in Hartford. He was also assistant clinical professor of orthopedic surgery and lecturer of anatomy at Yale Medical School. Dr. Goff was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Goff died May 18, 1975 at the age of 77.

Hendel, Isidore, Jefferson Medical School, 1917. Dr. Hendel was a general practitioner in the New London area since 1922, before his retirement in 1971. He was a past president of the New London City Medical Association and a past president of the New London County Medical Association. Dr. Goff was a member of the New London County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Goff died May 14, 1975, at the age of 79.

Katzenstein, Rolf E., Berne Medical School, 1938. Dr. Katzenstein was a pathologist in the Middlesex area since 1943. He was clinical associate professor of pathology at Yale University Medical School and a member of the Middlesex County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Katzenstein died May 25, 1975, at the age of 65.

Roland, Menelick L., University of Port-au-Prince, 1952. Dr. Roland was a practicing internist in the Hartford area since 1959. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Roland died April 3, 1975 at the age of 52.

Solomon, Charles I., Yale University, 1925. Dr. Solomon was a psychiatrist in the Hartford area since 1934. He was assistant clinical professor in the Department of Psychiatry at Yale University's School of Medicine and attending psychiatrist on the courtesy staff at St. Francis Hospital. Dr. Solomon died March 21, 1975 at the age of 73.

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Auxiliary Annual Report to the Connecticut State Medical Society

The purpose of our Auxiliary is to help you improve the quality of life through health education and services. We do this by taking time from the care of you, our families and our homes. We go into the community to help in causes promoting good health. When you read your wife's calendar you learn how she does this and realize that, like you, she is interested in public welfare. 900 of us work for you in Connecticut. 90,000 of us help the American Medical Association.

This year we raised thousands of dollars for medical education and research, collected surplus medical supplies from your office and hospital for distribution to needy health facilities, served with you as lobbyists for good health care in the Connecticut Medical Action Committee and by active support of political parties, candidates and causes, represented you on boards and in organizations, gave health books to libraries, worked for your hospital auxiliary, met with the Connecticut Nutrition Council, Health Association, Advisory School Health Council and your Council.

We promoted your goals in New London County in a weekly news article "Focus on Health," in Hartford County in a 20-hour course "Medical Self Help," in Middlesex County in a public panel discussion "Health Education, the School Aspect," in New Haven County's six public lectures "You Have the Right to Know."

For three years we have been involved in Quality of Life programs and have worked actively with the Cancer Society, Red Cross, Association of Religious Communities, Auerbach Service Bureau, Child and Family Services, Association for the Education of Young Children, Association for Retarded Children, Child Welfare Association, Conference of Christians and Jews, Dairy and Food Council, Connecticut Education Association, Bar Association, Heart Association, League for Nursing, Social Welfare Conference, Speech and Hearing Association, Federation of Women's Clubs, State Grange, State Library, Cystic Fibrosis Association, Easter Seal Society, Elementary School Principals, Family Services, Junior League, League of Women Voters, Mental Health, Social Workers, Council of Jewish Women, Parent-Teachers' Association, Girl Scouts, State of Connecticut Departments of Health, Mental Health, Children and Youth Services and Education, University of Connecticut Cooperative Extension Service and Medical School.

We learn how to work effectively in our communities by attending AMA Auxiliary workshops. Ten of us went to Chicago in June, twelve of us went to Pittsburgh in October, three of us went to Chicago in October, three of us returned there in November. Twenty of us will be in Atlantic City in June to see one of us become president-elect of the national AMA Auxiliary.

We do a lot. We could do more if you would subsidize our good works from your public relations funds. We would like to have this amount presented before our September board meeting so that we could plan ahead how wisest to promote you and your goals. As I often say to my husband, as your wives often say to you, "Thank you, dear, for all you do. And, now, will you please do a bit more." Your Auxiliary sends you today our collective gratitude, love and best wishes for your new year. And, what can *we* do for you?

Peggy Roch, *President*

PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine.*

ALLIED HEALTH

Physician's Assistant: Graduate of Yale's PA Program. Certified 12/74 by National Board of Medical Examiners for Physician's Assistants. Married, three children. Desires solo or group setting with physician or physicians having a busy practice. Write or call CSMS for resume.

Physician's Assistant: Available in August 1975. Prefers area of Family Practice, Emergency Room, Pediatrics or Surgery. Married, three children. 29 years old. Write Mr. M. Litzman, 888 Montgomery Street, Brooklyn, N.Y. 11213.

OPPORTUNITIES FOR PRACTICE

(If no name is listed, contact the Physician Placement Service for more details.)

Emergency Room Physician: Excellent opportunity for a full-time career oriented Emergency Medicine Physician in a 187-bed acute care general hospital serving a population of 56,000. Located in scenic Litchfield County, Northwestern Connecticut. Area offers excellent recreational facilities. Excellent salary and benefits. Write or call: Alden Seleman, M.D., Chief of Emergency Medicine Service, The Charlotte Hungerford Hospital, Torrington, CT. 06790, Telephone—203-482-9351.

Family Practice: Associate or solo practitioners needed in two Middlesex County communities. One is located mid-county, the other a coastal community. Contact C.S.M.S. for details.

Family Practice: Active practice in an attractive Fairfield County community. Hospitals within easy travelling distance. Physician expects to retire soon. Send information to M.C.A., M.D., c/o C.S.M.S.

Director of Student Health/College Physician: Connecticut College in New London. 1,600 co-ed campus. Associate physician and staff of 8 cover 22 bed infirmary. Experience in managing physicians, nurses and personnel in comprehensive health delivery program Salary negotiable; liberal fringe benefits. One month summer vacation. July 1, 1975. Dean Jewel Plummer Cobb, Connecticut College, New London, Ct. 06320.

Family Practice: One or two partners needed in Connecticut shore community. Convenient to New London, Middletown and New Haven. Busy summer season. Forward resume to L.M.A. c/o CSMS.

Internal Medicine: Part-time, (3 hrs./day, Monday thru Friday) to work in innovative comprehensive alcohol treatment program. Contact: Paul Errera, M.D., Professor Clinical Psychiatry, Yale University School of Medicine, or Chief, Psychiatry Service, V.A. Hospital, West Haven, CT. 06516.

Internal Medicine (or Family Practice): Part time opportunity doing disability physicals. Contact Mr. Robert Coletti at 566-4902. Examinations to be done in your own office.

Otolaryngologist: Meriden-Wallingford area needs an otolaryngologist to join two man group. Write C.S.M.S.

General Surgery: Board certified surgeon to assume active practice in Fairfield County. Physician's health requires that he curtail his practice. Write Surgeon c/o C.S.M.S.

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

(If no name is listed, contact the Physicians Placement Service)

Anesthesiology: Board certified. 42 years of age. Prefers hospital near New York. Presently in New York City. Trained at Jefferson Medical Center. Write S.M.M., M.D., c/o C.S.M.S.

Anesthesiology: Available August 1975. FLEX. Board eligible. 31 years old. 3½ years of anesthesia and ICU. Contact: S. Kahn, M.D., 212-650-7475. Mount Sinai Hospital, N.Y.

Dermatology: Wishes to relocate in Connecticut from New York City. 58 years old. Presently in private practice. 14 years in the U.S. Navy. Connecticut license. Write or call CSMS for resume.

General Practice: Connecticut License. Experience in ambulatory care. Graduate of Albany Medical College. Medium or small community. Group, associate or institutional practice. Available summer of 1975. Resume available at CSMS.

Internal Medicine: (Pulmonary Diseases). Available July 1975. 31 years old. Married. Completing fellowship at University of Cincinnati. FLEX. Harris Musafer, M.D., 2910 Scioto Street, "Sawyer Hall," Cincinnati, O. 45219.

Internal Medicine: (Gastroenterologist) Board eligible. ABIM. FLEX. 39 years old. Married. Desires practice in medium sized community or institutional position. Teaching experience. Available July 1975. Presently in practice in New Jersey. Kedar N. Kapoor, M.D., 1824 Country Club Drive, Cherry Hill, N.J. 08003.

Internal Medicine: Available summer of 1975. Board eligible. New York license. Trained at Upstate Medical Center. Prefers group or associate practice. Peter P. Cullen, M.D., 11-86 Granpian Road, Liverpool, N.Y. 13088.

Internal Medicine: Available summer of 1975. Completing training at St. Mary's Hospital. Board eligible. Medium or small community desired. Vincent A. Ippolito, M.D., 38 Golden Hill Road, Waterbury, CT. 06706.

Neurology: Available July 1975. Completing training at VA Hospital and Jefferson Medical College. 35 years old. Married. Board eligible. Prefers institutional or associate type practice. Sheikh Muhammed Sadiq, M.D., Box 413, V.A. Hospital, Coatesville, Pa. 19320.

Ophthalmology: Board eligible. Presently available. 30 years old. Particularly interested in southern Connecticut. Group or associate practice. Daniel Rosenbaum, M.D., 88 Atlantic Avenue, Brooklyn, N.Y. 11201.

Ophthalmology: Presently in practice. New York license. Trained in France and at the University of Pennsylvania. 49 years old. Interested in medium sized community. Can relocate on short notice. Solo or partnership. Write Z.I.K., M.D., c/o C.S.M.S.

Pediatrics: Connecticut license. Available July 1975. Presently completing fellowship at N.Y. Hospital—Cornell Medical Center. FLEX. Board eligible. Interested in group or associate practice or institutional position. Bertram N. Dias, M.D., 40 Prospect Avenue, Norwalk, Ct. 06850. 203-866-9915.

Physical Medicine: Available summer of 1975. Completing training at V.A. Hospital— UCLA in California. 38 years old. Married. Connecticut license. Board eligible. Contact C.S.M.S. for details.

Psychiatry: Available immediately. Connecticut license. Will cover E.R. services. 30 years old. Trained in United Kingdom and at Long Island Jewish Hospital. Contact C.S.M.S. for details.

Psychiatry: Desires situation within commuting distance from N.Y.C. Presently in practice. Residency at University of Missouri-Columbia and St. Louis. Pawan Chadha, M.D., 118 East Oakland Street, Monticello, Ark. 71655.

General Surgery: Available immediately. FLEX. Completing fellowship program. Luis E. Reyes, M.D., 77-17 171 Street, Flushing, N.Y. 11366.

General Surgery: 33 years old. Available in summer of 1975. Trained in general, vascular and trauma surgery. Board eligible. Chief resident at Long Island Jewish Medical Center. Frederic Swartz, M.D., 208-42 15th Road, Bayside, N.Y. 11360.

General Surgery: Board certified. Partnership or small group desired. Available August 1975. Presently in USAF. 30 years old. Jefferson Medical College. Charles J. Zwerling, M.D., 218 Chandler Road, Goldsboro, N.C. 27530.

General Surgery: Available summer of 1975. 32 years old. Board eligible. Completing training in New York City. Fordham University. Hahnemann Medical School. Solo, group or associate practice. Thomas L. Lunetti, M.D., 453 East 14th Street, New York, N.Y. 10009.

General Surgery: Board certified. Board eligible in thoracic surgery. Available in summer of 1975. New York license. 35 years old. Sultan Mohinddin, M.D., 147 New York Avenue, Smithtown, N.Y. 11787.

General Surgery: Certified, Part 1; available summer of 1975. Completing training at Lahey Clinic in Boston. K. Mostowfi, M.D., 19 Westgate Road, Apt. 6, Chestnut Hill, MA. 02167.

The files of the Society's Physician Placement Service will be updated during the month of July so that availability of candidates is as current as possible. Also, all opportunities will be validated.

As of June 1, 1975, resumes were on file for candidates seeking placement in Connecticut in the following specialities:

Physician's Assistants	6
Allergy	1
Anesthesiology	8
Dermatology	3
Emergency Room	1
Family Practice	2
Internal Medicine	40
Industrial & Institutional	4
Neurology	3
Obstetrics & Gynecology	6
Ophthalmology	8
Orthopaedics	10
Otolaryngology	4
Pathology	8
Pediatrics	16
Physical Medicine	1
Psychiatry	6
Radiology	2
General Surgery	29
Thoracic Surgery	1
Plastic Surgery	1
Urology	9

Physician Placement Service files contain the following opportunities according to specialities:

Allergy	1
Anesthesiology	1
Emergency Room	11
Family Practice	31
Internal Medicine	31
Industrial & Institutional	8
Neurology	1
Obstetrics & Gynecology	3
Ophthalmology	3
Orthopaedics	4
Otolaryngology	3
Pediatrics	9
Psychiatry	6
Radiology	1
General Surgery	1
Thoracic Surgery	1

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CORRECTION

In "An American Look at British Medicine" (39:301-305, May 1975), p. 301, it stated, through a typographical error, that a flat charge of $50 was made per prescription item. This should have been $0.50 or 50 cents.

INDEX TO ADVERTISERS

Aetna Life & Casualty ... IFC
Burroughs Wellcome Co. ... bet. 412 & 413
Classified Advertising ... 460
Connecticut Blue Cross ... 441
Arthur W. Eade, Insurance ... 4
Elmcrest Psychiatric Institute ... 441
Group Insurers, Inc. ... 460
Kenwood Laboratories ... 414, 438
Eli Lilly & Co. ... FC
New England Physicians Advisory Services, Inc. ... 445
Palms of Pasadena Hospital ... 438
Pharmaceutical Manufacturers Association ... 428, bet. 428 & 429
Physicians Planning Service Corp. ... 460
Roche Laboratories ... 2 & 3, bet. 452 & 453, IBC, BC
Roerig & Co. ... bet. 452 & 453
Sanibel Hospital, Inc. ... 437
Searle & Co., G.D. ... 452, bet. 452 & 453
Smith, Kline & French Laboratories bet. 412 & 413
Upjohn Co. ... bet. 428 & 429, 429
Waterbury Hospital Health Center ... 427

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The Journal of the Connecticut State Medical Society

VOLUME 39, AUGUST 1975, NUMBER 8

J. Thomas LaMont and Kurt J. Isselbacher Postoperative Hepatic Dysfunction 461
Walter G. Heimann, Robert E. Karns, and Herbert L. Snyder Xeromammography at a Community Hospital 465
Donald B. Alderman Surgery and Sclerotherapy in Varicose Veins 467
M. C. Koshy, Michael Kashgarian, and Christopher Boreyko Deficiency in the Nephrotic Syndrome 472
Roger O. Egeberg Malpractice: Where Is It Taking Us? 481
Hebbel E. Hoff, Bonnalie O. Campbell, and Stephanie Deavers First Louis H. Nahum Lecture Respiratory Control of the Heartbeat (Second of Two Parts) 485
Urabagilu Nagaraja Maternity Departments in Rural Community 507
John J. Bergan Human Solid Organ Transplantation 511
AMA Council on Medical Education Approved Program for Surgeon's Assistant 493
Department of Health, State of Connecticut Medical Microbiology Laboratory Utilization Report 499
Report of the Judicial Council, AMA The Physician and the Dying Patient 514
Editorials: Paul F. Moson Accreditation for Physician's Assistant Programs 477
Roy N. Barnett Towards Better Bacteriology 478
Letters to the Editor: Anthony H. Horan, Mark S. Frankel Human-Semen Banking 483
John Burbank, Robert B. Zurier X-ray Plates 483

Table of Contents: page I

BECOTIN®
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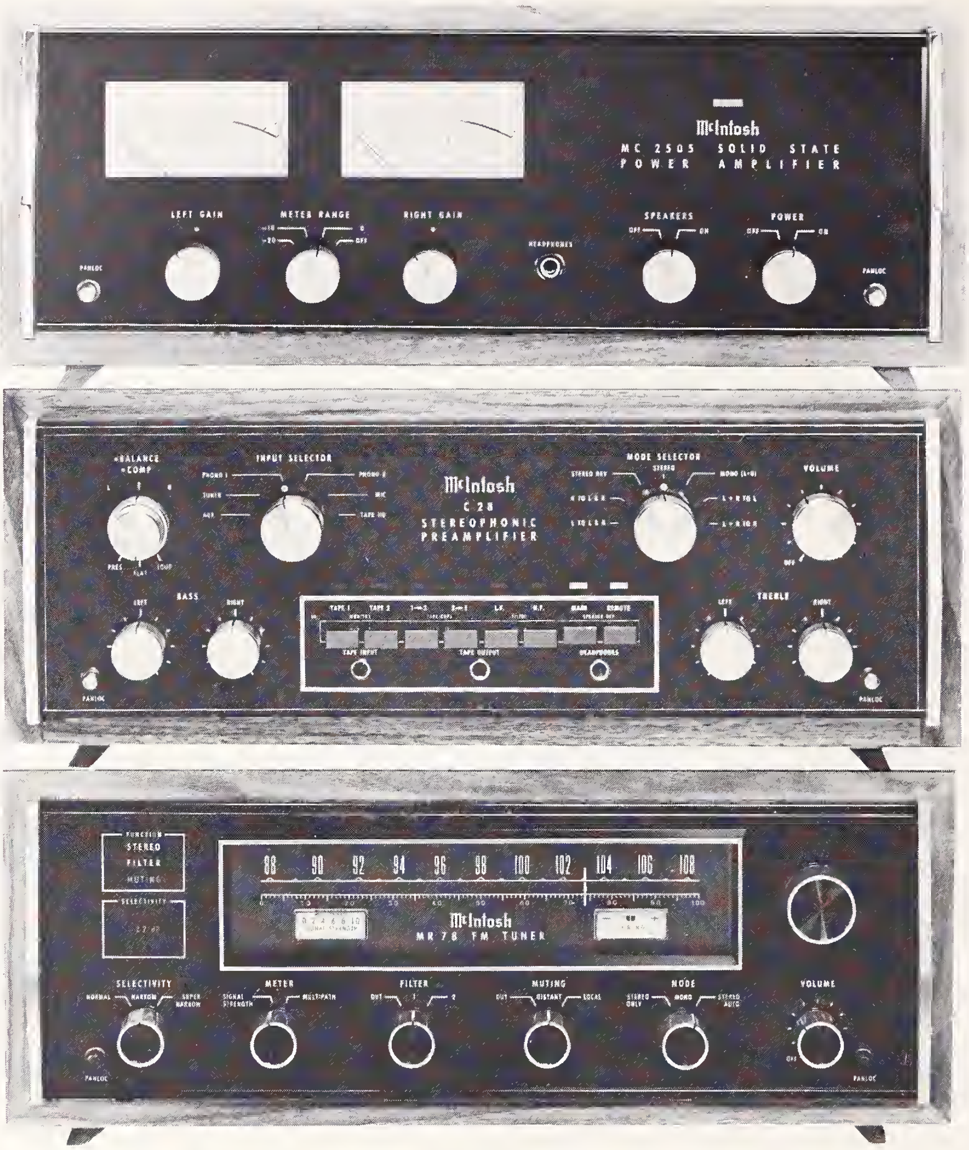

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Connecticut Medicine

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Vol. 39/No. 8

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POSTMASTERS: Send all change of address notices to 160 St. Ronan Street, New Haven, Conn. 06511.

CONTENTS

scientific:

Current Concepts of Postoperative Hepatic Dysfunction, *J. Thomas LaMont, M.D. and Kurt J. Isselbacher, M.D.* 461
Xeromammography at a Community Hospital, A Year's Experience, *Walter G. Heimann, M.D., Robert E. Karns, M.D. and Herbert L. Snyder, M.D.* 465
Surgery and Sclerotherapy in the Treatment of Varicose Veins, *Donald B. Alderman, M.D.* 467
Factor IX Deficiency in the Nephrotic Syndrome, *M. C. Koshy, M.D., Michael Kashgarian, M.D., and Christopher Boreyko M.D.* 472

editorials:

Accreditation for Physician's Assistant Programs 477
Towards Better Bacteriology 478

departments:

The President's Page 475
Reflections from the Dean's Office, *Robert U. Massey, M.D.* 476
Letters to the Editor:
    Anthony H. Horan, M.D. 483
    Mark S. Frankel, Ph.D. 483
    John Burbank, M.D. 483
    Robert B. Zurier, M.D. 483

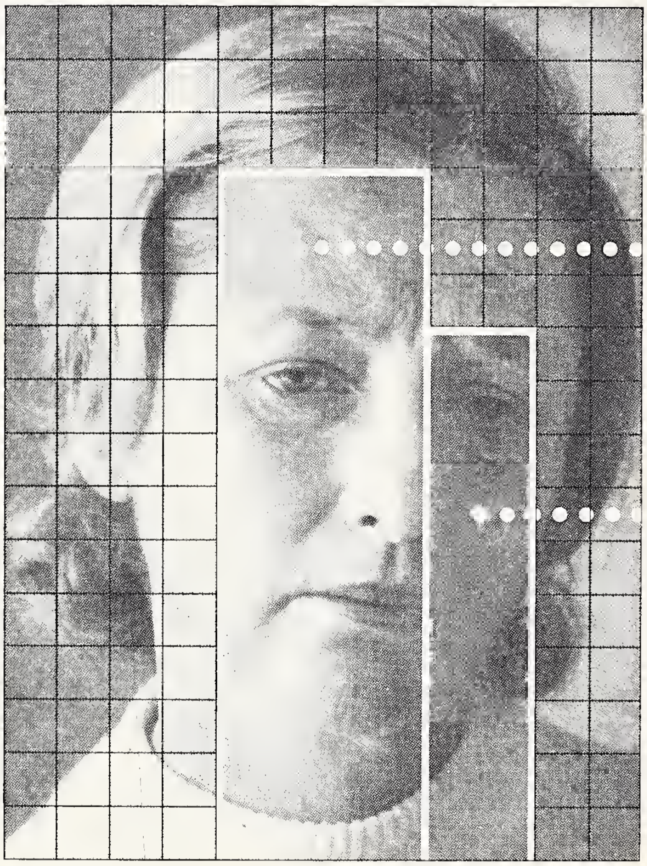
special articles:

Malpractice: Where Is It Taking Us? *Roger O. Egeberg, M.D.* 481
The Respiratory Control of the Heartbeat, The First Louis H. Nahum Lecture (Second of Two Parts), *Hebbel E. Hoff, M.D., Ph.D., Bonnalie O. Campbell, Ph.D. and Stephanie Deavers, B.A.* 485
Essentials of an Approved Educational Program for a Surgeon's Assistant, Report of the AMA Council on Medical Education, 1974 493
Report of the Ad Hoc Committee on Medical Microbiology Laboratory Utilization, State of Connecticut, Department of Health, *Raymond C. Bartlett, M.D., Chairman* 499
Should Small Rural Community Maternity Departments Be Closed? *Urabagilu Nagaraja, M.D.* 507
A Review of Human Solid Organ Transplantation, *John J. Bergan, M.D.* 511
The Physician and the Dying Patient, Report of the Judicial Council, AMA 514
From the Executive Director's Office 518
Physician Placement Service 521

miscellaneous:

A Change in MDs' Attitudes Noted 471
Our Connecticut Malpractice "Crisis" 497
Report of the Editorial Committee of Connecticut Medicine, *J. Alfred Fabro, M.D., Editor*—Annual Meeting House of Delegates 479
Special Notices 510

Both often



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Current Concepts of Postoperative Hepatic Dysfunction

J. Thomas LaMont, M.D. and Kurt J. Isselbacher, M.D.

Abstract—Approximately 1/3 to 1/2 of surgical patients develop minor abnormalities of liver function in the postoperative period, while significant jaundice (bilirubin V 2.5 mg%) occurs in 1% or less of patients. Although the exact pathophysiology of postoperative jaundice is unknown, a number of factors have been implicated including hypotension, hypoxemia, sepsis, blood transfusion and allergic or toxic reactions to drugs and anesthetic agents. Since most cases of postoperative jaundice are due to damage to the hepatocyte rather than extrahepatic biliary obstruction, surgery is rarely necessary.

The liver, like most organs of the body, is affected by the stress of major surgery. In most instances, the alterations in hepatic function are relatively minor and clinically insignificant. Severe abnormalities of liver function, including jaundice, develop in only a minority of surgical patients. The purpose of this paper is to review the pathophysiologic consequences of surgery and anesthesia on hepatic function and to describe the various clinical presentations of postoperative jaundice.

Minor Postoperative Liver Dysfunction

Elevation of SGOT, SGPT, alkaline phosphatase, bilirubin and prothrombin time have been demonstrated in from 25-75% of patients undergoing surgery and inhalation anesthesia.[1] [2] These changes are minor (less than a two-fold increase), and usually isolated; that is, only one or perhaps two laboratory tests are abnormal while the remainder are within normal limits. It is not known whether the surgery itself or anesthesia leads to these abnormalities; lesser degrees of hepatic dysfunction have been noted after abdominal surgery performed under spinal anesthesia. A number of investigators have been unable to correlate the incidence of abnormal liver function tests with the type or length of anesthesia, the type of operation or the age of the patient.

Pohle studied a battery of liver function tests before and after major surgery in 154 patients.[3] Mild, sporadic elevations of one or two tests occurred in 53 per cent, but all returned to normal between the 7th and 10th postoperative day. Hepatic dysfunction occurred in 66 per cent of patients receiving spinal anesthesia; 60 per cent receiving cyclopropane, 60 per cent receiving ether and 55 percent receiving thiopental. In a similar study Dawson and his co-workers were unable to demonstrate a significant difference in postoperative liver function between a group of patients receiving ether or halothane.[4]

Postoperative Jaundice

Exact figures are not available, but a reasonable estimate of the incidence of clinically evident postoperative jaundice (total serum bilirubin 2.5 mg%) appears to be 1% or less. It is obvious that under certain conditions the risk of postoperative jaundice is greatly increased. French and his colleagues found a 47% incidence of postoperative jaundice in a group of cirrhotics undergoing splenorenal shunts.[5] Starr reported an overall incidence of jaundice in 8.6% of patients after open heart surgery.[6] It is not surprising that the incidence of jaundice paralleled the number of valves replaced; i.e. 14% for one valve, 33% for two valves and 53% for three valves. Traumatic shock associated with severe postoperative jaundice was described in 12 of 500 patients by Nunes et al.[7] Thus, certain factors, such as pre-existing liver disease, severe hypoxia or hypotension and cardiac failure probably enhance the risk of developing postoperative jaundice.

Pathophysiology of Postoperative Jaundice

Jaundice can be caused by three basic mechanisms: 1.) overproduction of bilirubin, 2.) impaired uptake, conjugation or excretion of bilirubin by the liver and 3.) extrahepatic biliary obstruction. In clinical practice one often finds several of these mechanisms playing a role in a surgical patient subject to a number of factors which can affect liver function, such as drugs, transfusions, hypoxia, sepsis, heart failure, etc. The etiologic classification of postoperative jaundice is given in Table 1 and includes the conditions known to contribute to or cause hyperbilirubinemia after anesthesia and surgery. It is important for the clinician to distinguish those patients requiring re-operation for relief of extrahepatic obstruction from those in whom obstructive-type jaundice is due to intrahepatic cholestasis and in whom a second operation might be hazardous.

1. Increased Bilirubin Production

Bilirubin is produced in the reticuloendothelial system by the breakdown of senescent red blood cells.

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The average daily production is 250 to 300 mg, which is conjugated and excreted by the liver into the bile. The liver has considerable reserve function and can excrete 2 to 3 times this pigment load before the bilirubin level is increased. *Hemolytic anemia* is a rare cause of postoperative jaundice but should be considered in patients with unconjugated or indirect hyperbilirubinemia and elevation of the reticulocyte count. This condition should be suspected in patients with known pre-existing hemolytic disease such as thalassemia, sickle-cell anemia or glucose-6-phosphate dehydrogenase deficiency. The combination of surgery, multiple drugs, infection, hypoxia, etc. may cause brisk hemolysis and jaundice in this group of patients.

Hemolysis of transfused erythrocytes can also contribute to the pigment load in the surgical patient.[8] In the average unit (500 ml) of bank blood approximately 10% of the erythrocytes will be hemolysed within 24 hours following transfusion, liberating 7.5 gm of hemoglobin; the latter in turn is converted to 250 mg of bilirubin. The liver can conjugate and excrete its extra bilirubin without the development of jaundice. However, in the severely ill surgical patient who may receive 20 or 30 units of transfused blood this can overwhelm the excretory pathway for bilirubin and contribute to elevations of both the conjugated and unconjugated fractions. Resorption of blood from hematomas may increase the bilirubin load in surgical patients. Finally, the occurrence of hemolysis on prosthetic cardiac valves, particularly aortic valves, has been well described and can contribute to the jaundice seen after open heart surgery.

2. Hepatocellular Damage

Most cases of postoperative jaundice result from direct damage to the hepatocyte. This can be manifested clinically either as a *hepatitis-like pattern* with marked elevation of the SGOT and mild elevation of the alkaline phosphatase and bilirubin or a *cholestatic pattern* in which there is striking elevation of the alkaline phosphatase or bilirubin and only minimal increases of SGOT. The latter type of hepatocellular injury is often indistinguishable from extrahepatic biliary obstruction and hence poses a difficult diagnostic problem.

Postoperative Hepatocellular Necrosis

One of the most dramatic types of postoperative jaundice is seen in the very rare patient with *halothane hepatitis.*[9] Approximately one patient in 10,000 who receives halothane will develop massive hepatic necrosis, which is pathologically indistinguishable from fatal viral hepatitis. The cause of this condition is unknown, but an allergic mechanism has been suggested in view of the occurrence of eosinophilia and a more severe response after repeated exposures to halothane, particularly if the anesthetic is given within one month of the initial reaction. It is of interest that children appear not to be susceptible to halothane hepatitis, and adults with pre-existing liver disease are probably not at increased risk.

The typical patient with halothane hepatitis develops fever, leukocytosis and eosinophilia 2 or 4 days after the anesthesia. The SGOT is increased to the level of 200 to 500 units; jaundice may be initially mild or absent. Some patients with this mild picture go on to develop massive hepatic necrosis with very high SGOT leads a rising serum bilirubin, prolonged prothrombin time and hepatic encephalopathy. Liver biopsy or autopsy shows massive hepatic necrosis and stromal collapse as is seen in fulminant viral hepatitis.[10] The fatality rate in this condition is 20-40%, and mild reactions are probably more common than previously realized.

Halothane hepatitis is obviously an absolute contraindication to further use of this agent. A similar reaction has been reported after the use of methoxyflurane (Penthrane), another halogenated anesthetic.[11] It is also evident that massive hepatic necrosis may follow other inhalation agents such as ether or cyclopropane.[12] A number of anesthesiologists believe that halothane has been unfairly implicated as a unique cause of postoperative liver necrosis and have criticized the largely retrospective nature of the studies on halothane jaundice.[13] [14] The debate will likely continue until a good animal model or convincing in vitro studies prove or disprove the causative role of halothane in this situation.

Postoperative viral hepatitis is caused by transfusion of blood or blood products containing the hepatitis B virus and appears 30 to 70 days after inoculation. Most cases of hepatitis B or serum hepatitis are anicteric and are usually regarded by the patient and physician as a mild viral illness. In several large studies it has been shown that the ratio of anicteric to icteric cases ranges from 3 to 1 to 100 to 1.[15] *Pre-existing viral hepatitis* greatly increases the incidence of postoperative hepatitis who underwent surgery, Harville and Summerskill reported 4 deaths from liver failure and 5 other serious complications.[16] In this same study there were no deaths or complications among 16 patients with drug hepatitis. In general, patients with evidence of moderate to severe hepatocellular damage (high SGOT, low albumin prolonged prothrombin time) are at greater risk from surgery or anesthesia than patients with intrahepatic cholestasis and mild hepatocellular dysfunction.

Another cause of a hepatitis-like pattern in the postoperative patient is centrilobular necrosis of the liver from *shock*. In a large series of 500 patients with severe traumatic shock admitted to a large city hospital emergency room, Nunes et al reported significant jaundice in only 2.4%.[7] It is not clear why some patients with severe shock develop liver necrosis, but additional factors such as profound hypoxia, heart failure, multiple transfusions or sepsis may be involved in the pathogenesis. The typical patient with shock liver develops jaundice 2 to 10 days after surgery, with serum bilirubin 5 to 20 mg %, SGOT levels up to 500 units and serum alkaline phosphatase 2 to 3 times normal. Complete healing of the centrilobular necrosis occurs without development of chronic liver disease.

Intrahepatic Cholestasis

A rare and puzzling form of postoperative jaundice which mimics complete bile duct obstruction has been called *benign postoperative intrahepatic cholestasis*.[17] This condition is usually encountered in patients who have undergone extensive surgery complicated by hypoxia, massive blood replacement, sepsis and renal and cardiac failure. In the typical case, jaundice appears on the 2nd to 10th postoperative day with peak bilirubin levels of 10 to 40 mg %, accompanied by market increases of the serum alkaline phosphatase. The SGOT elevation is minor, usually not more than 200 units. Liver biopsy reveals only the classic findings of cholestasis, namely inspissated bile and dilated bile canaliculi. The management of this condition is supportive, inasmuch as complete healing to the liver is the rule unless the patient succumbs to another postoperative complication. Retrograde endoscopic cholangiography to establish patency of the bile duct is a useful technique to avoid reoperation in these already desperately ill patients.

Another cause of cholestasis in the surgical patient is *intrathoracic* or *intra-abdominal abscess* caused by a variety of gram-negative or gram-positive organisms.[18] The mechanism of cholestasis in the presence of bacterial infection is not known but may be caused by release of toxins or other substances which injure the liver. A number of *drugs* can cause cholestasis, particularly chlorpromazine, methyltestosterone and norethandrolane. A hepatitis-like picture can be seen after administration of erythromycin estolate, chlortetracycline, chloramphenicol, sulfonamides, isoniazid, and paraaminosalicylic acid (PAS). Drug jaundice may be particularly confusing in a surgical patient in view of the large numbers of drugs given before, during and after surgery, and the concurrence of other factors which may cause jaundice. The correct diagnosis may occasionally be suggested by the presence of other allergic manifestations such as eosinophilia, fever, skin rash or arthralgia preceding the jaundice.

Extrahepatic Obstruction

Obstruction of the biliary tree is a rare cause of postoperative jaundice, but correct diagnosis is most important because surgical intervention may be required. *Bile duct injury*, often unrecognized at the time of surgery, occurs primarily during biliary tract surgery but occasionally after other upper abdominal procedures such as gastrectomy.[19] Complete ligation of the bile duct results in prompt appearance of jaundice and ascending cholangitis. Transection of the common duct causes a biliary fistula which drains around the T-tube or collects internally. These catastrophies require re-operation and repair within several weeks of the original operation. Bile duct injury of a less severe degree may cause a stricture which only partially occludes the lumen, leading to the insidious onset of obstructive jaundice.[20] Early surgical repair of a stricture prevents the occurrence of permanent liver damage such as fibrosis or cirrhosis. Retained *biliary stones* after common duct exploration can cause persistent postoperative jaundice and sepsis. This entity can be caused by stones in the hepatic bile ducts or in the cystic duct remnant if the surgeon leaves an overly generous stump during cholecystectomy.

Jaundice occurs in approximately 30% of patients with *acute postoperative pancreatitis* presumably from obstruction to bile flow due to edema at the head of the pancreas.[21] Another syndrome of obscure etiology, *acute postoperative cholecystitis,* is also accompanied by minor degrees of jaundice in a third of cases.[22] The clinical picture is one of acute cholecystitis appearing up to 30 days after an operation unrelated to the biliary tract. Liver function abnormalities are mild and the serum bilirubin is rarely elevated above 5 mg %. At surgery approximately half the patients have acalculous cholecystitis; gangrene and free perforation are common. In a recent series,[22] 4 out of 20 patients with postoperative cholecystitis died, indicating the necessity for prompt recognition and surgical exploration.

Other Causes

Gilbert's syndrome or familial unconjugated hyperbilirubinemia is characterized by mild elevations of the unconjugated or indirect fraction bilirubin to 1.5 to 3.0 mg % without evidence of other liver function abnormalities or obvious hemolytic anemia.[23] The liver biopsy is normal and the patients are asymptomatic. After surgery or during minor infections it is not uncommon for the bilirubin to rise to 4 or 5 mg % in these patients. This is especially alarming if the existence of the condition was not recognized prior to surgery. The jaundice invariably improves as infections are controlled and oral feedings resumed; extensive diagnostic procedures are not indicated. *Dubin-Johnson* syndrome is another type of familial jaundice often made worse by the stress of surgery.[24] These patients have direct or conjugated hyperbilirubinemia and cannot excrete gallbladder dye effectively even though the gallbladder may be normal. Surgery usually causes a worsening of jaundice in these patients as it does in Gilbert's syndrome.

TABLE I

Etiologic Classification of Postoperative Jaundice

- I. Overproduction of Bilirubin
  - A. Hemolytic anemia
  - B. Blood transfusion
  - C. Resorption of hematomas
  - D. Prosthetic heart valve
- II. Hepatic Damage
  - A. Hepatocellular necrosis (hepatitis-like pattern)
    - 1. Halothane hepatitis
    - 2. Viral hepatitis
    - 3. Shock
    - 4. Drug "hepatitis"
    - 5. Pre-existing liver disease
  - B. Intrahepatic cholestasis (obstructive pattern)
    - 1. Benign postoperative cholestasis
    - 2. Bacterial infection
    - 3. Drug cholestasis
- III. Extrahepatic Obstruction
  - A. Bile duct injury
  - B. Choledocholithiasis
  - C. Postoperative pancreatitis

Conclusions

Postoperative hepatic dysfunction of mild degree is a common occurrence after both general and spinal anesthesia and is of no clinical significance. Jaundice in the surgical patient may result from diverse causes including hypotension, hypoxemia, increased pigment load, sepsis and drug reactions. The clinical picture may resemble hepatitis, or a pattern of cholestasis may predominate. The clinician must differentiate those patients requiring surgical intervention for relief of extrahepatic biliary obstruction from those with intrahepatic cholestasis.

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Xeromammography at a Community Hospital
A Year's Experience

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ABSTRACT—**Xeromammography is a modification of conventional mammography. It substitutes an electrostatic imaging process for X-Ray films. Of 731 consecutively examined patients 30 had carcinoma. Accuracy in the detection of cancer was 93%. The incidence of non-palpable (occult) tumors was 20%. This relatively high detection rate of occult tumors should encourage the routine use of this modality in the high risk population of women 40 years and older.***

Soft tissue roentgenography of the breast is not new. In this country Warren[1] published a study of this subject in 1930. In more recent years Gershon-Cohen[2] and Egan[3] have been major contributors in this field. The technique developed by the latter, utilizing low kilovoltage and industrial film, is in wide usage today and produces good roentgenographic images of the breast.

Xeromammography is a technical modification of conventional mammography. It utilizes a photoelectric imaging system based on the science of Xerography. As a diagnostic radiologic method it has been advocated as a superior modality for breast examination. Our experience with this method over the past 12 months confirms the excellence of mammary Xeroradiography.

Method

Xerography was invented in 1937 by Chester F. Carlson, a physicist, and was further developed by others.[4] Principal credit for a workable Xeromammography technique has to be given to John N. Wolfe of the Hutzel Hospital in Detroit whose work transformed an experimental device into an excellent practical tool. Xeroradiography differs from conventional imaging in the substitution of an electrically charged selenium-coated metal plate for X-Ray film. The positively charged plate is placed under the part to be examined and is exposed to a conventional X-Ray beam of low kilovoltage. The electrostatic charge pattern on the plate after the exposure will correspond to the various densities in the examined part according to the amount of radiation absorbed.

To make this electrostatic pattern visible the plate is sprayed with a fine blue colored plastic powder called a toner, producing a powder image on the plate surface. This image is then transferred to a sheet of paper for permanent record. The metal plates are brushed clean and reconditioned for re-use. This process is automatic and the finished dry image on paper is delivered in 90 seconds.

While there are a number of differences in the image characteristics, the Xeroradiograph is superior to the film image in two important respects. First, it has a broader recording latitude. In a breast examination, for instance, the skin as well as the thick prepectoral soft tissues will be seen in good detail in the same exposure. The second important advantage is the edge enhancement effect which is unique to the photoelectric process. When there is a difference in density or discontinuity in density or thickness, this discontinuity is exaggerated on the Xeroradiograph producing high local contrast. Most of the information on the Xeroradiograph is contained in this edge contrast.

Our routine breast examination consists of two exposures per breast: a lateral view which includes the chest wall, and a cranio-cauded view. Additional exposures are taken if deemed necessary.

The stated skin entry dose per exposure with the Xeroradiographic technique is 1.5 rads (ibid). The dosage delivered by the popular senographic technique utilizing a molybdenum target and Kodak AA film is approximately three times as high.

To facilitate surgical localization of very small tumors or suspicious clusters of microcalcifications, we utilize a single needle technique.[5] A long 25 gauge needle is introduced pre-operatively into the breast and advanced to the site in question. The positioning of the needle is monitored radiographically. To confirm removal of the tissue in question we obtain specimen radiographs.

Clinical Indications

In our department mammography is considered an examination for the detection of cancer. No particular effort is made to separate and classify benign disease. The patients examined included those with mammary dysplasia, a dominant mass, nipple discharge, family history of cancer of the breast, prior mastectomy and

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cancerophobia. More recently there have been requests for baseline studies in patients 40 years and older.

Results

We used the Xerographic technique on all 731 patients examined in calendar year 1974. 78 of these patients underwent surgery and of these 30 were found to have carcinoma (Figure 1) of the breast (Table 1). Two of these we read as benign. In survey studies the incidence of carcinoma is characteristically under 1%. The high incidence of cancer in this series, approximately 4%, reflects the selection of the examined patients. Six of the 30 carcinomas were occult (Table 2). We define an occult tumor (Figure 2) as one that is not clinically palpable.

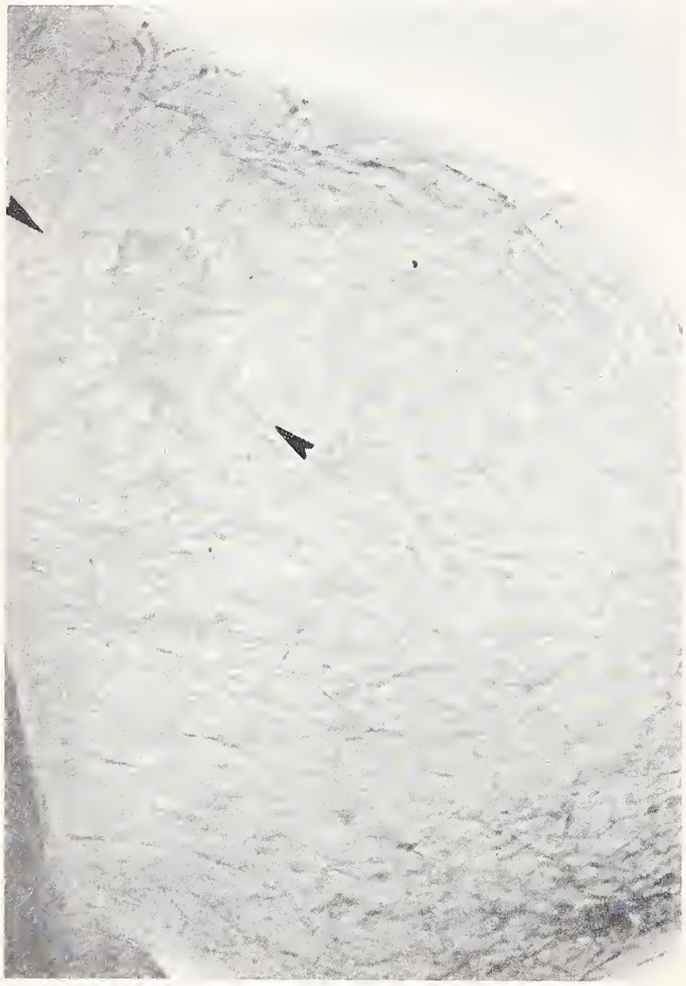

Figure 1

Characteristic carcinoma: a mass lesion (between arrows) with an irregular border. Note cluster of punctate calcifications within the tumor.

TABLE 1

SERIES OF 731 CASES

RADIOGRAPHIC REPORT

Benign	688	2 had carcinoma
Susp. for Ca.	19	5 had carcinoma
Ca.	24	23 had carcinoma

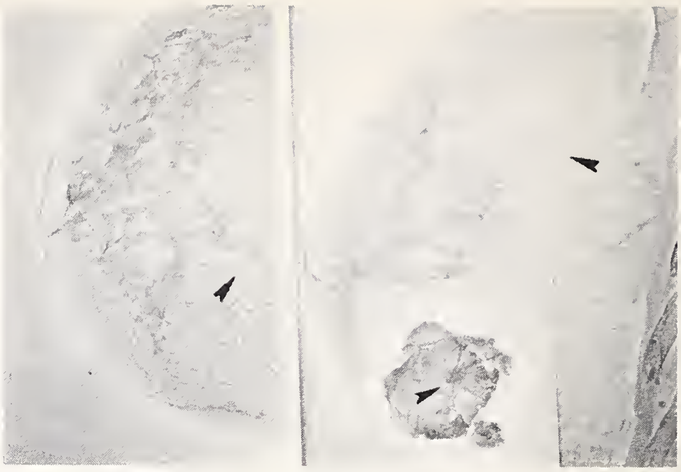

Figure 2

Small nonpalpable carcinoma. The small spiculated tumor is seen in the lateral view (right), and in the cranio-caudad view (left). The specimen radiograph is shown in the inset.

TABLE 2

OCCULT CARCINOMAS

6 of 30 carcinomas	20%

Discussion

When we first acquired the Xerographic apparatus we undertook a controlled study. Every patient was examined by both film and Xerographic technique. We discontinued the double examination after reviewing the first 100 consecutive cases. At that point we had gained the impression that Xerograms contained more information. Now, after a year's experience, we can confirm the work of previous investigators[6 7 8] that Xeromammograms are (a) easier to interpret; (b) afford greater detail; (c) are more accurate; (d) the finished print is more quickly obtained; (e) require less radiation than industrial film mammograms.

Of the 30 carcinomas found in our group of patients we diagnosed 28 preoperatively. Of these, 23 were given the reading of carcinoma and 5 were given a reading of "suspicious for carcinoma" with a recommendation for biopsy. Of the two misdiagnosed cases one was Paget's disease where the characteristic Paget's cells were the only histologic finding. The other false negative reading was in a small dense breast. The dense breast is notorious for shielding cancers from detection by radiography.[6] Accuracy in the detection of carcinoma was 93% (Table 3). This falls into the upper level of reported results.[9] The incidence of false positive readings we find acceptable.

TABLE 3

ACCURACY OF DIAGNOSIS

30 CARCINOMAS

True Positive	28	93%
False Negative	2	7%

Xerography is a new tool in our department and receives more than average attention by the authors.

All examinations are performed by two specially trained technologists who take great interest in this modality. Perhaps this explains the good results. Also as previously indicated, it is our impression that Xerographs are easier to interpret than conventional mammograms.

An important finding was the relatively high incidence of occult carcinomas (20%) despite the selected group of patients referred to us. The occult tumor promises a lower incidence of lymphatic spread.[7] Unfortunately this series does not allow for an analysis of the lymphatic spread of occult tumors. Of the 6 patients with non-palpable tumors, three underwent radical mastectomy and had negative lymph nodes, and three were treated by simple mastectomy. We consider it likely that once we see a larger proportion of so-called baseline studies the percentage of occult carcinomas will be higher. While mammography contributes to the management of the concerned patient with mammary dysplasia, nipple discharge, or cancerophobia, it is the detection of the non-palpable tumor which makes it a truly important tool. The fact that 2 of 10 carcinomas were detectable by radiographic means only, validates the use of Xeromammography. Indeed, on the basis of these findings, we advocate the routine use of this modality in the high risk population of women 40 years and older.

Conclusions

1. Xeromammography is an improved method of radiographic examination of the breast.
2. 20% of all carcinomas in this series were demonstrated only by Xeroradiography.
3. This tool should be helpful in detecting early lesions and therefore improve survival in cancer of the breast.

*Addendum: In the first 5 months of 1975, we examined an additional 626 patients. The results of the preliminary analysis of this sample corroborated our experience of the previous year.

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Surgery and Sclerotherapy in the Treatment of Varicose Veins

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It is hardly an original observation that training in the treatment of venous disease tends to be cavalier. Specifically, variceal disease (like hemorrhoidal disease) is assigned to the least experienced house officer with little instruction by the attending. It is not surprising that amongst the laity the attitude is widespread that medical treatment of varices is useless and surgery must be expected to be temporary in its effects and characterized by ugly scars little better than the varices it incompletely controls.

Since excellent functional and cosmetic results can be attained by the surgeon who is willing to learn the basics of sclerotherapy in addition to minor modifications in surgical technique, this primer is presented for consideration. It is the author's intention to present a practical technique which yields a very satisfactory result in cases of varicose veins without a complete review or attempt to explore the entire field of venous disease. The method presented is based on more than 1,000 personally performed combined surgical-sclerotherapy procedures. Others have recommended combined surgical-sclerotherapy treatment of varices.[1] This paper is intended to reiterate its value.

1. *Surgery—Indications for surgery in variceal disease*—The commonest signs and symptoms causing the patient to seek relief are aching, heaviness, fatigue, appearance and the common complications of saphenous incompetency such as medial malleolar ulceration, superficial thrombophlebitis, stasis dermatitis and pigmentation. Large ulcerations and low leg brawny edema are usually due to the postplebitic syndrome rather than to simple saphenous incompetency.

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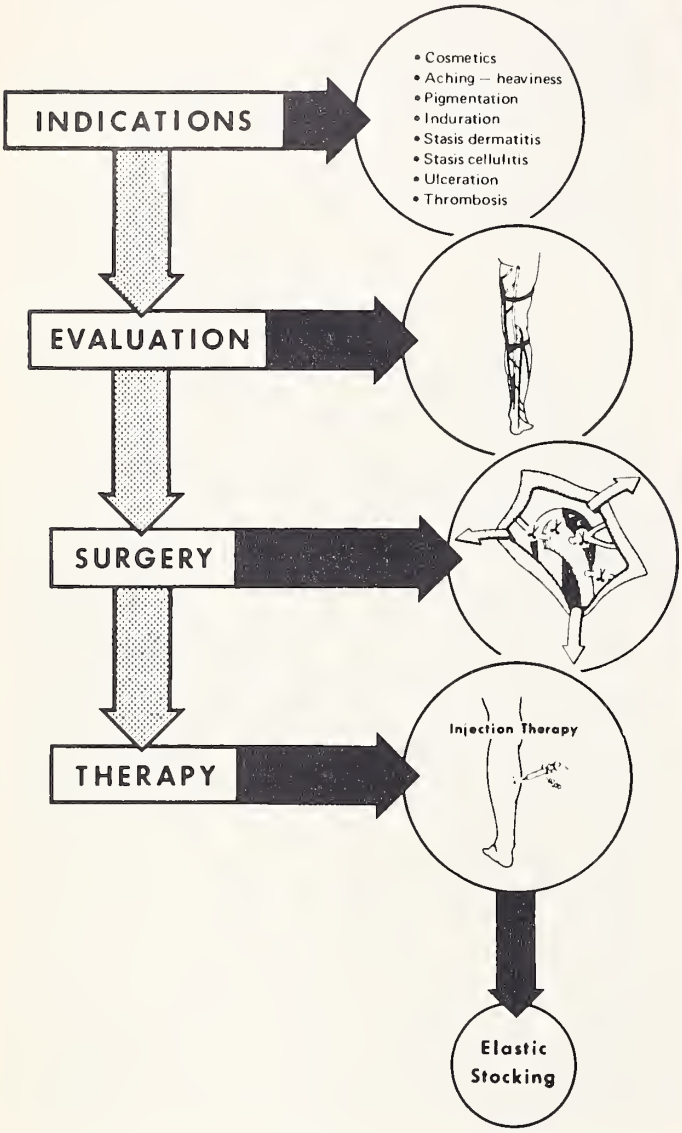

Figure 1
Treatment of varicose veins

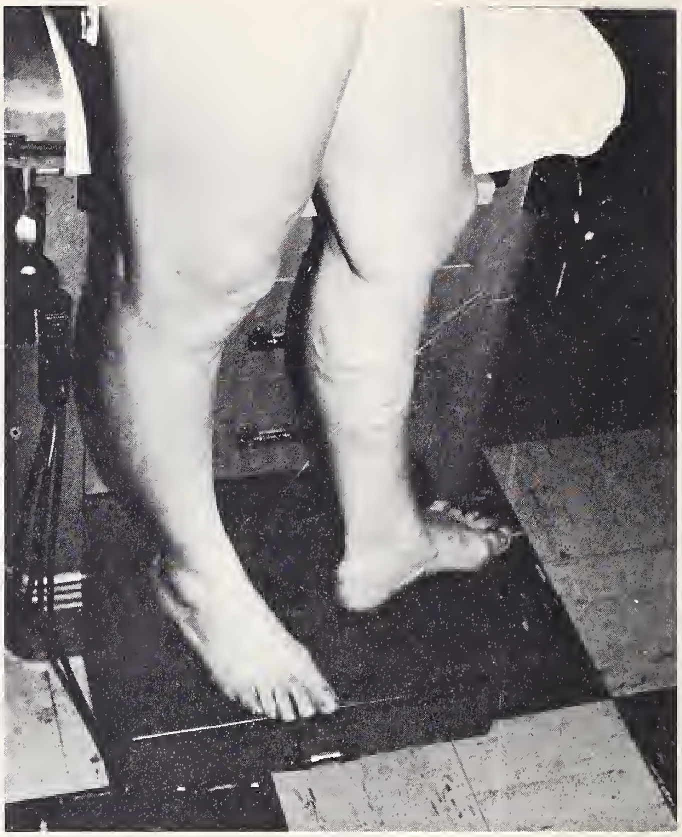

Figure 2
Varicose veins pre-operatively. Trendelenburg test showed these to be related to incompetency of the greater saphenous system.

II. *Pre-operative evaluation and preparation*—During the initial office examination, a simple Trendelenburg test will indicate whether there are incompetent communicating veins requiring specific division and whether the lesser and greater saphenous veins are incompetent. A firmly applied tourniquet of adequately large tubing (e.g., blood pressure tubing) is applied at upper thigh level after elevating the leg to empty the varices. On standing, if the varices remain collapsed for 20-30 seconds and fill rapidly from above when the tourniquet is removed, the varices are due to incompetency of the greater system alone. If the thigh tourniquet fails to control the varices, it is applied just below the knee. Control at this level indicates lesser saphenous incompetency. Rarely, an incompetent communicating vein at Hunter's canal or a high entry of the lesser saphenous into the greater can give a similar picture. Differentiation can be made by control of the varices with a finger pressing transversely across the popliteal space as a confirmation of lesser saphenous etiology. When both systems are involved, both above and below knee tourniquets will be necessary for control of the varices. Failure to control the lower leg varices with both above and below knee pressure indicates incompetent communicating veins which can be localized with successively lower tourniquets from knee to ankle. This circumstance usually means we are dealing with a postphlebitic syndrome. Assurance that the deep venous system is patent can be obtained by having the patient walk for five minutes with a firm tourniquet below the knee. Softening of the distended varices and absence of leg pain should be noted. Increased pain and distension of the varices strongly suggests a deep thrombophlebitis which has not recanalized well. Vein stripping is contraindicated under these circumstances. A thorough head to toe scrub-shower is taken by the patient at home for two days prior to admission. Shaving is performed from umbilicus to toes. With the patient standing, the operator himself marks out all varices with a black laundry marker. This may seem a waste of the surgeon's time, but it is the only way to assure that each marking is correct and that all varices can be found at surgery.

III. *Operation*—On the operating table, the patient is placed in 20° to 30° Trendelenburg position to minimize the pressure in the venous system of the legs. This helps avoid bleeding during surgery and minimizes hematoma formation. Empirically, only a single layer of each skin preparation from toes to umbilicus is required. The groin incision is made first precisely in the subinguinal crease high over the femoral triangle. An upright or oblique incision is markedly inferior cosmetically and for exposure. Remembering that the femoral-saphenous junction is 1 to 1 and 1/2 cm. medial to the femoral artery caudad to the inguinal ligament, the 3 to 5 cm. incision can be readily centered over it. Once Scarpa's fascia is opened, spreading with a blunt Whittlaney self-retaining retractor should readily demonstrate the saphenous vein. A simple bloodless dissection is aided by removing the adventitia and dissecting in the "shiny plane" as close to the anterior surface of the vessel as possible. Using a Mixter (right-angle) clamp, the branches are encircled with 3-0 plain catgut and divided. Full visualization of the sapheno-femoral junction is necessary to be sure all saphenous branches are divided. Our experience in re-operating for recurrent varices, even when the original procedure was performed by a competent surgeon, is that the cause is usually the failure to have followed the saphenous all the way to its femoral junction. One method of assuring that the junction has been reached is to be sure that the vein identified as the femoral is at the same depth as the femoral artery which lies just lateral to the vein. If the vein is superficial to the artery, further dissection is required. It has been noted that in approximately 90% of dissections, the highest branch of the saphenous is directed cephalad toward the inguinal ligament. Other common causes of recurrence after surgery include failure to remove an incompetent lesser saphenous vein or to divide incompetent communicating veins.

Passing a flexible internal stripper upward from a medial malleolar incision serves to again identify the saphenous before it is divided and doubly ligated at the sapheno-femoral junction. Alternative methods include passage from the groin distally of an internal or external (Mayo) stripper. After stripping out the saphenous vein, pressure is maintained along the tract for five minutes by the clock to minimize hematoma formation.

In the 15-20% of cases with lesser saphenous insufficiency, this vessel is readily picked up just behind the lateral malleolus and removed by internal or external strippers to its junction with the popliteal vein. In about 12% of patients, the lesser saphenous empties into the greater saphenous high in the medial thigh rather than into the popliteal vein. The sural cutaneous nerve is only a few millimeters deep to the vein and must be carefully avoided from ankle to popliteal level. The two structures are often of similar size. It is very easy to pick up and protect the nerve with a closed Mixter clamp directed deep and slightly posterior to the lesser saphenous vein at the level of the lateral malleolus.

Once the main saphenous veins are removed, the indelible markings over the varices are employed to direct the placing of multiple *small* (no more than 1 or 1½cm.) incisions over variceal junctions. These are made longitudinally everywhere on the leg except for the ankle and foot where transverse openings are used. If possible, no incisions should be made within two inches of the knee because of the tendency to spread with motion. If unavoidable, a transverse incision is preferable. The entire variceal system is removed via these small incisions, using straight, blunt hemostats to pull out the branches in the subcutaneous tissue: Occasionally the external (Mayo) stripper is helpful for the larger varices. If the preoperative markings are adequate and done by the surgeon himself, the completeness of removal will be extremely satisfactory. Damage to the saphenous and sural nerves should be readily avoidable by keeping in mind their anatomical position deep to the greater and lesser saphenous veins and by working at a superficial level just deep to the cutis.

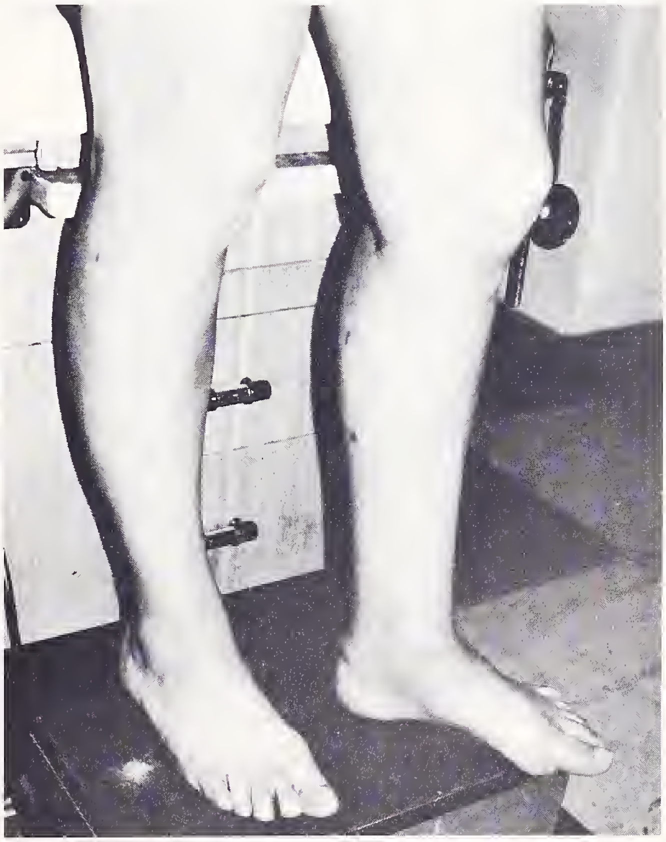

Figure 3

Post-operative view (three months). Note small size of scars. Three injections of sclerosing solution were given during third post-operative week.

Closure is accomplished with intracutaneous 3-0 plain catgut with the knots buried and interrupted 4-0 silk in the skin. Individual gauze pads are placed over the incisions. An elastic bandage is applied overall from metatarsal head level to groin. Elevation of the legs at 30° all through the operation is stressed and this is maintained in the recovery room and on return to the patient's room to avoid the risk of hematomas and deep thrombophlebitis. Ambulation for a few minutes out of each hour is begun on the evening of surgery. The patient is usually discharged in 48 hours. Suture removal is performed on the sixth postoperative day. Elastic bandages are used for 2½ weeks postoperatively. Most patients return to work from 2½ to 4 weeks postoperatively. Because the *non-varicose* saphenous vein is potentially so valuable for arterial reconstruction, we make every effort to preserve this structure. Thus, varices below the knee with competent saphenous valves, by Trendelenberg test, are treated by stripping from ankle to knee, plus local stripping of varices, preserving the normal saphenous vein in the thigh.

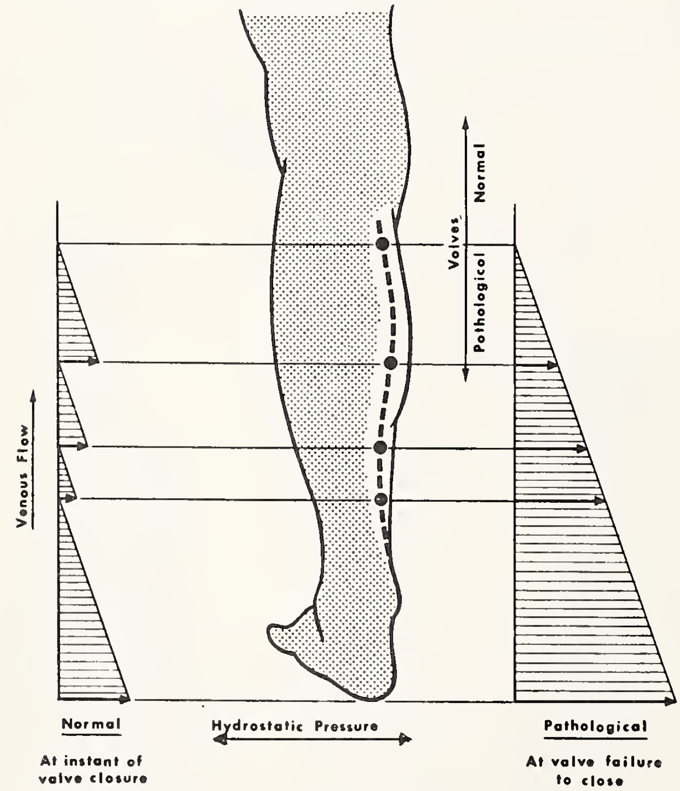

Figure 4

Comparison of hydrostatic pressure pattern between normal and pathological valves.

IV. *Sclerotherapy*—A very complex mystique has surrounded injection therapy of varicose veins since Chassaignac[2] suggested their obliteration by injection of perchloride of iron in 1853. It has included an armamentarium of innumerable varieties of solutions, special syringes and needles as well as instruments for emptying the veins prior to injection. The technique which we have employed requires only readily available material and is equally effective.

While the surgery described above gives an excellent cosmetic and functional result, about 90% of patients will have some varices remaining. About a month postoperatively, with the patient standing on a platform, the legs are re-examined employing oblique floodlighting from above. Any varices are injected with small quantities (1/2—2 cc.) of 1% Sotradecol® employing a 2 to 3 cc. syringe with a 25 gauge needle. The plastic, individually packaged variety of syringe is quite satisfactory. Very small superficial veins can have treatment initiated with 0.5% solution of Sotradecol®. A folded gauze pad is placed over the injection site and firmly taped in place. The patient is allowed to walk immediately. He is told to expect firmness and mild tenderness along the injected vein. Used after surgery, rarely is a solution stronger than 1% required. However, if sclerotherapy is employed for large varices (in the presence of a *competent* saphenous vein) or for large recurrent varices after inadequate surgery, 2% to 3% Sotradecol® may be required after determining that the varices do not respond to an initial injection of 1% solution. Although only two mild allergic reactions have been seen in over 7,000 injections, a concentrated glucose-saline solution is employed for patients with a history of asthma. It is important to realize that the main reason for the disfavor in which sclerotherapy is held in the United States is due to the use of excessively strong solutions in the past. Progressing from a mild solution to a moderately strong one as indicated by the patient's reaction is the safest technique. No sloughs have occurred employing sclerotherapy in this manner. There is no need to use such excessively reactive material as sodium morrhuate or even 5% Sotradecol®. If the patient requires sclerosis of the main saphenous, but represents an elevated surgical risk, ligation of the sapheno-femoral junction and resection of the proximal few inches of the saphenous can be performed under local anesthesia as an outpatient procedure, and then sclerotherapy readily performed with the milder solutions. An average of five injections over one or two visits is employed postoperatively. The patient is instructed to return in one to two years if any varices are noted. Employing sclerotherapy, it is simple to maintain the initial excellent result obtained by adequate surgery, and the patient satisfaction level is extremely high.

V. *Elastic Support*—Surgery and sclerotherapy are two of the three columns upon which rests the management of varicose veins of the lower extremities. The third, elastic support, is well known—and commonly ignored. It is an excellent form of therapy for the elderly or poor risk patient with venous insufficiency. It is the only practical *preventive* measure which can be demonstrated to function both objectively and subjectively. While the precise pathophysiological mechanism of initiation of variceal development remains unclear, two etiological factors are clearly apparent to the clinical observer. That there is an hereditary element, is indicated by the fact that 95% of our patients state that one or both parents had varices. Secondly, followers of certain occupations are particularly likely to develop varices. These include hairdressers, nurses, barbers, waitresses and surgeons. The common factor of long periods of standing is apparent. The "peripheral venous pump" fails to direct the venous blood centripetally because of factors related to valvular or perivenous connective tissue abnormality, or due to occupational characteristics. *Adequate* elastic support is the best preventive measure. While it will not cause regression of varices, it can give symptomatic relief of leg aching, swelling and fatigue. Any surgeon who has to stand for many hours at the operating table can readily confirm the symptomatic relief provided. The usually available elastic stocking is relatively ineffective because the elasticity is more or less evenly distributed throughout its length—in fact, it is often greatest at calf level where it acts as a garter causing an actual increase in variceal pressure in the lower leg.

The classic studies of Sigg[3] in Switzerland have led to development of a graduated pressure stocking which is highly effective and comfortable.* Although various partial and full leg types are available for the postphlebitic syndrome and lymphedema, its use in variceal disease usually requires only a below knee variety.

VI. *Summary*—A technique of surgical therapy combined with sclerotherapy has been described which has led to a very satisfactory improvement in the usual results of varicose vein treatment. The tendency of the surgeon to avoid sclerotherapy is felt to be due to the complexity of the method as commonly described and to poor results in the past related to excessively strong solutions. These objections do not exist when the simplified method described here is employed. In spite of our surgical bias, we have found that the complementary use of sclerotherapy adds a great deal to the functional and cosmetic results of varicose vein therapy. One mode of therapy without the other gives suboptimal results.

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*The Sigvaris® stocking is available through Camp International, Inc. in the United States and Canada.

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A Change in MDs' Attitudes Noted

At the last American Medical Association Convention in Atlantic City, a militant strike resolution was toned down before the meeting ended. But even the final version recognizes a "primary commitment" only to "essential medical needs," while declaring that "physicians are entitled to use all available means" of protest "without jeopardizing the medical care of their patients." The resolution's ambiguities are obvious; and they leave room for future "withholding of services," or what laymen would call job actions or strikes.

Despite the vigorous opposition some delegates expressed toward the new militancy, it is now undeniable that many physicians are ready to resort to trade union tactics they once abhorred. This change of attitude reflects the frustrations of many doctors, in part because of the malpractice crisis but in part also because of the increasing bureaucratization of medicine. Today the *Federal Register,* with its daily avalanche of new rules and regulations, is the highest authority in American medicine, instructing physicians increasingly as to whom they may treat, how they may treat, how long they may keep patients in hospitals, what drugs they may prescribe, and what fees they may charge. The historic autonomy of the medical profession is fast disappearing; and as controls proliferate so does anger among many physicians who, rightly or wrongly, see themselves reduced in status and in usefulness to their patients.

But whether a greater readiness to strike is the correct reaction to this situation—even from the doctors point of view—is highly questionable. The AMA itself—through its recent court victory against government regulations for review of hospital utilization—has already shown there are effective alternatives. The possibility of limited medical slowdowns or job actions must raise fears among patients and create resentments which could eventually boomerang against physicians. Those who have dedicated their lives to healing the sick have the obligation—and a strong self-interest—not to destroy the confidence of the public whom they serve.

—Reprinted from New York Times.

Factor IX Deficiency in the Nephrotic Syndrome

**M. C. Koshy, M.D., Michael Kashgarian, M.D.,
and Christopher Boreyko, M.D.**

ABSTRACT—Two cases of the nephrotic syndrome with prolonged activated thromboplastin time presumably due to urinary loss of coagulation factors are described. Both patients had no spontaneous bleeding problems. The prolonged plasma thromboplastin time does not require correction, as the serum levels of coagulation factors are probably adequate to prevent spontaneous bleeding. When procedures are contemplated where bleeding is a potential problem, such as renal biopsy, liver biopsy or surgery correction of thromboplastin time is recommended. Factor XII deficiency may not require correction. Short course of cortisone therapy is suggested as a means of correcting the coagulopathy. The improvement in plasma thromboplastin time is not always related to improvement in proteinuria. Long time follow-up of one case shows that the coagulation defect may disappear though proteinuria had worsened. The reason for this observation is speculative.

Coagulopathies and venous thrombosis associated with the nephrotic syndrome are well recognized in the literature but overt bleeding diathesis is rare and only recently reported.[1-3 14] The increased observation of this latter phenomenon may be due to the increased popularity of renal biopsies. Activated plasma thromboplastin time (APTT) is now done routinely before renal biopsy. As a result, cases with slight coagulation defects are more readily recognized.

Since the description of acquired factor IX deficiency in four cases of the nephrotic syndrome by Handley and Lawrence in 1967, it has been assumed that prolongation of plasma thromboplastin time in the nephrotic syndrome is due to factor IX proteinuria. Honig reported that in the nephrotic syndrome factor IX deficiency is less common than factor XII (Hageman factor) deficiency, but the latter is not usually associated with bleeding problems. More recently Lange et al (1974) described activation of Hageman factor resulting in diminished blood levels of factor XII in the nephrotic syndrome.

In this report two cases of acquired bleeding diathesis in patients with the nephrotic syndrome are described. They give interesting insight to their remittent course, relation of bleeding disease to the magnitude of proteinuria, and variable response to therapy in the same individual.

Case 1

B.J., a 26-yr. old white male, presented to the Bridgeport Hospital with edema and proteinuria of approx. 4 weeks duration. He had no prior history of renal disease and there was no history of a bleeding disorder. Routine work-up before renal biopsy revealed a prolonged APTT (see below).

Twenty-four-hour urine protein excretion was quantitated to be 10.7 gms and 15.2 gms. Serum protein electrophoresis revealed a serum albumin of 0.86 gm%. Alpha 1 globulin and alpha 2 globulin were within normal range. Beta globulin and gamma globulin were slightly below normal. Activated plasma thromboplastin time was determined to be 60 sec. (control 25-45), venous clotting time—6 minutes; platelet count—220,000/mm.^{3} A circulating anti-coagulant was not demonstrated, as shown by correction of APTT after addition of factor IX or normal plasma.

In view of the prolonged thromboplastin time renal biopsy was deferred. It was elected to treat him with prednisone 100 mg daily. After 3 weeks of therapy APTT was still 51.4 sec.; after 4 weeks 35 sec. It was determined that at 3 weeks 24 hr. urine protein excretion had declined to an average of 4.35 gms. Another interesting clinical observation was change of APTT from normal to abnormal value temporarily related to development of otitis media, which reversed to normal on prompt treatment of the infection. A percutaneous renal biopsy was done 5 weeks after the initiation of prednisone therapy. No complications of percutaneous biopsy were encountered. Pathological examination revealed membranous glomerulonephritis.

Case 2

D.L., 19-yr. old black male, presented with a history of the nephrotic syndrome since the age of 5 yrs. He had been treated with intermittent prednisone therapy, but had been very irregular in taking medications. Follow up of his disease course had been sporadic. He had no history of bleeding despite a history of participation in competitive sports.

In 1960, a 24-hr. urine revealed 5.2 gm of protein and serum albumin was 0.8 gm%. Under a presumptive diagnosis of Minimal Change Disease prednisone was advised. In 1966 he had a renal biopsy done at Yale-New Haven Hospital. No excessive bleeding had been observed. At that time he had normal bleeding time, and clotting time. No activated plasma thromboplastin time was done in 1967. Twenty-four hour urine protein was 7.2 gm. He was followed up intermittently until 1969. He was lost, to medical follow-up from 1969 to 1971, and when seen in 1971 he had not been taking prednisone for approximately two years. When seen in 1971, he had normal B.P., normal BUN and serum creatinine. Twenty-four-hour urine revealed 9 gm of protein. Serum albumin was 0.64 gm%; alpha^1, alpha^2 and gamma globulin were within normal limits, and beta globulin was decreased.

Activated plasma thromboplastin time was determined on 3 occasions to be 81 sec., 73 sec., and 93 sec. respectively. Pro-

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thrombin time and Lee White clotting time were normal. Platelet count was 490,000 mm.^{3}

A scheduled renal biopsy was postponed due to prolonged plasma thromboplastin time. He was placed on 60 mg prednisone every other day. No confirmatory studies could be done. He was not seen medically again until 1974.

At that time a urinary excretion of 12.6 gm protein in 24-hr. was documented. Serum albumin was 0.9 gm%, APTT was 42.8 sec. Prothrombin time and platelet counts were normal. On account of the prolonged history of significant proteinuria, a second percutaneous renal biopsy was done. The pathological examination showed minimal change disease complicated by focal glomerulosclerosis. He had only microscopic hematuria after the renal biopsy.

Discussion

Most adult patients with the nephrotic syndrome have unselective proteinuria.[4] "Selective proteinuria" refers to the urinary loss of protein confined to the low molecular weight substances such as albumin (M.W. 69,000), or transferrin (M.W. 90,000). Selective proteinuria is usually associated with a steroid sensitive Minimal Change Disease.[5] It is assumed that in generalized proteinuria the larger molecular weight substances leak through the glomerular sieve.

Although molecular weight is not synonymous with molecular size these two must correspond closely. Studies with graded dextran have set the average glomerular screen in normal kidney at a molecular weight of 5,000.[6] Fewer than 1 in 10,000 pores of a normal glomerulus are permeable to compounds of molecular weights of 90,000. In disease states with damage to the glomerular membrane more and more pores become permeable to substances of larger molecular size, and they appear in the urine.

Molecular weight of coagulation factors is given below. With regard to urinary loss in the nephrotic syndrome, Group II is important clinically. Among factors IX, XI, and XII with molecular weights between 100,000 and 200,000 there is no unanimity of opinion which deficiency occurs most often. Handley and Lawrence have reported a series in which 4 out of 30 patients with the nephrotic syndrome had factor IX deficiency. However, Honig could find no patient with factor IX deficiency among 10 children with the nephrotic syndrome and prolonged PTT. Nine of these 10 children had factor XII deficiency.

It has been suggested by Natelson[14] that factor IX deficiency is often seen in association with proteinuria in excess of 10 gm/24-hr. In all cases reported by Handley et al the PTT improved as the proteinuria diminished. Similar changes were found in 3 of the four patients described by Natelson. But one case showed improvement in factor IX loss, while quantitative proteinuria was still unchanged. In our case 1, prolonged APTT was demonstrated when proteinuria was in excess of 10 gm. There was a definite decrease in proteinuria when PTT returned to normal under prednisone therapy. However, case 2 shows that, in the same individual, coagulation defect need not necessarily be related to the magnitude of proteinuria as suggested by the absence of bleeding in 1966 (proteinuria 7.2 gm), prolonged APTT in 1971 (proteinuria 9 gm), and normal APTT in 1974 (proteinuria 12.6 gm). It seems that, in Case 2 in 1974, the proteinuria was worse, but APTT had improved to normal. The reason for this is not clear. Studies into the synthesis rate of factor IX in different periods of life and comparison of synthesis rate and degradation or urinary loss in the nephrotic syndrome may give insight into this.

ESTIMATION OF MOLECULAR WEIGHT[7]

		Sephadex Gel Filtration Estimate	*Other Estimates*
Group I (Mol. Wt. over 200,000)	Factor I	over 200,000	341,000[8]
	Factor VIII	over 200,000	196,000[9] 180,000[10]
	Factor V	over 200,000	
	Factor XIII	over 200,000	
Group II (Mol. Wt. between 100,000 and 200,000)	Plasminogen	100,000 - 200,000	143,000[11] 83,000[12]
	Factor XI	100,000 - 200,000	
	Factor XII	100,000 - 200,000	
	Factor IX	100,000 - 200,000	110,000[10]
Group III (Mol. Wt. between 50,000 - 100,000)	Factor II	50,000 - 100,000	68,900[13]
	Factor VII	50,000 - 100,000	
	Factor X	50,000 - 100,000	

Should prolonged thromboplastin time from urinary loss of coagulation factors be treated? None of the patients in Handley's series and Natelson's series had hemorrhagic manifestations. Neither of our patients had any bleeding problem in life. This presumably is related to the level of factor IX still present in the plasma. It may be noted that bleeding is not usually a manifestation of Hemophilia B (hereditary factor IX deficiency) when plasma level of factor IX is in excess of 25 percent.[15] It may be a safe recommendation that in factor IX deficiency due to the nephrotic syndrome no correction of plasma thromboplastin time is indicated unless hazardous procedures or surgical interventions are contemplated. Factor XII deficiency is a laboratory finding with no in vivo counterpart as Hageman factor is not necessary for in vivo hemostasis. Indeed, one patient in Honig's series with prolonged thromboplastin time underwent renal biopsy with no complications.

In acquired factor IX deficiency in the nephrotic syndrome, the possibility exists that the steroid therapy for coagulopathy may change renal histology before the biopsy is obtained. However, in most instances steroid therapy for a short period does not significantly change the diagnostic features in a renal biopsy. In our patient 1, plasma thromboplastin time correction occurred after 3 weeks. Where there is some contraindication for short term steroid therapy, infusion of plasma factor concentrates may be the only course remaining. Fresh blood or whole plasma infusions may be impractical due to large volumes involved to correct factor deficiency.

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The President's Page

"The first thing we do, let's kill the lawyers."
HENRY VI PART II IV ii 86

Comments made by some of our more aggressive colleagues suggest that implementation of the above quotation from Shakespeare would represent a satisfactory solution to the malpractice dilemma. Others, perhaps of a gentler nature, would settle for elimination of the contingency fee. Certainly both solutions would result in a precipitous decline in suits. The former plan, however, would probably not be socially acceptable and the latter might well leave us even worse off than we are today.

The contingency fee concept is justified traditionally as enabling the poor to obtain justice in court where otherwise he would be unable to afford the same legal services. As an alternative, some form of national legal service would have to be initiated, supported by tax dollars. In such a system there would be no economic deterrent to a personal injury suit since lawyer's fees, even if kept low, would be paid regardless of outcome. This would encourage litigation and lawyers could well be expected to take on as many cases as possible, even if there were little chance for success. A sliding scale for contingent fees would be more just to the claimant but would have little or no predictable beneficial effect on the cost of insurance for physicians. These proposals, along with others, only illustrate the familiar caveat that for every complex problem there is a simple solution which is invariably wrong.

Beginning with Senator Ribicoff's Report on Malpractice in 1969, a consensus has gradually been building toward a goal of public policy. While goals are always easier to state than achieve, the direction in which we must travel is clear enough. The status quo is no longer viable. There must be prompt and appropriate reimbursement for persons who are injured as the result of negligent or incompetent care, but that reimbursement also should be provided through a mechanism which operates efficiently with a minimum of cost in time and expense. In addition, the mechanism must distinguish between malpractice and maloccurrence—between those failures and injuries due to genuine negligence and those that will occur despite the most modern and conscientious medical care.

The courts and the law certainly deserve much of the blame for the present situation and predictably any permanent solution will inevitably affect lawyers in the practice of tort law. The present system needs streamlining badly. The interminable delays in the awkward, expensive adversary system waste large quantities of time and money. There has been an obvious trend to higher and higher awards given by sympathetic juries and jurists which seem to be more based on concern for the unfortunate plaintiff than on demonstrable negligence or incompetence. The prosecution of malpractice cases must be simplified and made more of an arbitration procedure and less of a battle between warring lawyers.

These are trying times for both professions. Our self-regulatory rights and institutional freedoms are steadily being withdrawn by the State. Recent polls suggest the public blames both doctors and lawyers for the medical malpractice problem, particularly for failing to adequately police their own members.

We have a rare opportunity to serve both our professions and the public at the same time by dispelling the ugliness and the certain meanness of spirit that infects the whole controversy of medical malpractice insurance. Let us stop the shouting, the threats, and the counterthreats we have witnessed recently. Let us get on with the business of instituting reforms and finding solutions. The public and our patients deserve nothing less.

Guy W. Van Syckle, M.D.
President

Reflections From The Dean's Office

Robert U. Massey, M.D.

In designing the future, whether for medical care and medical education or energy production, the planners tend either to stumble over or to deny the distinction between needs and wants. There is a whole philosophy, as well as a whole psychology here. For totally rational beings needs and wants would be synonymous terms, providing also that the totally rational beings were totally moral. For those who believe that moral behavior derives from rational ethics, reason and ethics are synonymous as well. In a totally rational society, ethical behavior would be everywhere manifest, and needs and wants would be the same.

We can imagine such a society, and the writers of utopias have delighted to describe it. Whether it is compatible with human freedom need not trouble us. It is not a potentiality which we need anticipate.

Where wants arise from unreasoned desires and are equated with need, we should anticipate chaos except that the laws of the marketplace or of nature exert their restraining hand. Commercial planners make no distinction between wants and needs and in fact invest a considerable effort to create wants which are then treated as needs. This is their business and should not surprise us.

Medical care is not a commercial enterprise but is rather an essential service in limited supply. Our masters and planners make physicians feel commercial by talking about the health industry and about consumers and providers. Having labelled us a commercial enterprise, they enjoy chiding us for abandoning our professionalism so as to make us feel guilty.

Public servants whose power depends upon votes are also generally unconcerned about the distinction between wants and needs. Whatever current desire can be easily satisfied is represented as a need to be met. This does not deny that statesmanship and legislative courage sometimes make history a surprising and unpredictable tale, but the power of votes and dollars is always calculated and the sum is rarely ignored. The lobbyists see to that.

In a recent issue of *The National Board Examiner* one of the goals urged upon medical education was a curriculum "truly appropriate to society's needs."[1] The author then proceeds to admonish us in italics: *"Pronouncements from a cloister may not mesh accurately with attainable objectives for society."*[1] Habit requires us to ask if he has bothered to think hard about the difference between society's needs and society's wants. When one feels guilty there is an inclination to regard every request as imposing an obligation. Anyway, I am not persuaded that man's lot would have been better without the religious cloisters of the twelfth century and the academic cloisters which followed. There would have been less philosophy, science, and art. Whether there would have been more service is debatable. There would have been less technology if no one had built cathedrals.

In a democracy, the natural tendency of commerce and government is to be drawn toward populism, the indiscriminate satisfaction of needs and wants, often responding to unconsidered public desires even when these are against the public interest. Unfortunately, the opposite when it occurs is the tyranny of those who know best.

Almost a half century ago, Alfred North Whitehead stated, "We are at the threshold of a democratic age and it remains to be determined whether the equality of man is to be realized on a high level or a low level."[2]

A government yielding first to votes and then to commercial power, balanced always uneasily between the two when they are contrary, or swept along in the flood when the pull of both makes for a neap tide, must be democracy at the low level. This populism which caters to the mean concern of the largest numbers can be restrained only by imaginative initiative taken for the public good, seized by statesmen willing to risk their popularity to sustain democracy at the high level.

The initiative must be imaginative; that is, it must visualize a world which does not exist but which is possible if resources can be spared to meet needs, and needs are imagined in perspective, against the whole. That kind of imagination cannot be expected of legislatures and committees; society must protect its cloisters.

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2. *Whitehead, Alfred North;* The Aims of Education and other Essays, published by MacMillan Company, New York, fourth printing 1967, page 107.

DR. ROBERT U. MASSEY, Dean and Professor of Medicine, University of Connecticut, School of Medicine, Farmington.

Connecticut Medicine

Editorials

Accreditation for Physician's Assistant Programs*

Since 1965, schools of medicine, hospitals, community colleges, universities, and other institutions have established formal educational programs for the physician's assistant (P.A.). Depending on the institution offering the P.A. training and the educational background of the student, a certificate and/or academic (associate or baccalaureate) degree may be awarding of degrees and certificates, they differ in awarding of degrees and certificates, they differ in program title as well. Physician's Assistant, Physician's Associate, MEDEX, Child Health Associate, Orthopedic Assistant, and Surgeon's Assistant are all titles denoting an individual functioning as a P.A. While most programs emphasize training their graduates in primary care, some programs are training their graduates for surgery and other specialties.

With the variations on the theme of training physician's assistants, it became necessary to insure accountability through accreditation. Accreditation is the process by which an agency or organization evaluates and recognizes a program of study or an institution as meeting certain predetermined standards, or "essentials." Accreditation can be viewed as a means of protection for society through insuring that a program or institution meets minimal requirements.

Description of the Occupation

The descriptions of the primary care P.A. and the surgeon's assistant are the same, and essentially state that the assistant be a skilled person qualified by academic and clinical training to provide patient services under the supervision and responsibility of a physician or surgeon who is in turn responsible for the performance of that assistant.

The function of the P.A. is to perform, under the responsibility and supervision of that physician or surgeon, diagnostic and therapeutic tasks in order to allow the physician to extend his services through the more effective use of his knowledge, skills and abilities. The assistant will not supplant the physician or surgeon in the sphere of the decision making required to establish a diagnosis and plan therapy, but may assist in gathering the data necessary to reach the decision and in implementing the therapeutic plan for the patient.

Intelligence, the ability to relate to people, a capacity for calm and reasoned judgment in meeting emergencies, and an orientation towards service are qualities essential for the assistant. He must maintain respect for the person and privacy of the patient.

The ultimate role of the P.A. cannot be rigidly defined because of the variations in practice requirements due to geographic, economic and sociologic factors. The high degree of responsibility an assistant to a physician or surgeon may assume requires that at the conclusion of his formal education he will possess the knowledge, skills and abilities necessary to provide these services appropriate to the setting.

Program Objectives

The P.A. program's curriculum generally has a special focus to applied medicine and aims at providing the solid foundation necessary for the quality of a physician's assistant. The paramount objectives of the curriculum are usually: 1. development of a sense of responsibility to the patient and to society; 2. development of a critical and inquiring attitude to nurture a continuing process of self-education; 3. education to an understanding of the fundamental procedures and skills of modern medicine and health care. The physician's assistant must, therefore, be prepared for the deep understanding of the socioeconomic and psychological factors for both therapy and prevention of disease, along with the basic and clinical sciences of medicine. Typical courses in the didactic phase would include Anatomy, Physiology, Pharmacology, Clinical Medicine, Microbiology, Physical Diagnosis, Human Sexuality and Family Practice Seminar. The practicum phase, which permits students to apply their knowledge and further develop skills, allows for exposure through clerkships in specialties such as Internal Medicine, Ambulatory Medicine, Family Practice, Pediatrics, Obstetrics & Gynecology, Surgery, Psychiatry, and Emergency Service.

Accreditation Process

In 1971, the American Medical Association's Council on Medical Education established the "Essentials" of an Approved Educational Program for the Assistant to the Primary Care Physician." In 1974, the American College of Surgeons proposed to the Council on Medical Education of the American Medical Association the "Essentials of an Approved Educational Program for the Surgeon's Assistant." The "Essentials were adopted and, therefore, there are currently two types of accreditation for the development and self-evaluation of programs, including such aspects as clinical affiliations, facilities, students and faculty, finances, records, and curriculum. Programs recognized as meeting these "Essentials" may voluntarily apply for accreditation to the American Medical Association.

The process by which one becomes accredited differs, however, depending upon whether a program is seeking accreditation in primary care or surgery. If a program wishes to become accredited in primary care, it would file an application for accreditation with the American Medical Association. The program would then be site visited usually by two primary care physicians, an AMA staff member, and a graduate physician's assistant who is working clinically or who is involved in P.A. program administration. The report of the site visit team is forwarded to the Joint Review Committee (JRC) of the AMA, which is comprised of five collaborating organizations—The American Academy of Family Physicians, The American Academy of Pediatrics, The American College of Physicians, The American Society of Internal Medicine, and The American Academy of Physician's Assistants. The Joint Review Committee reports its recommendations to the Council on Medical Education of the AMA which makes the final decision to accredit.

Accreditation for a Surgeon's Assistant Program is essentially the same with a few exceptions. Instead of primary care physicians, there are surgeons on the site visit team and the report of the team is sent to the American College of Surgeons instead of the JRC. The American College of Surgeons reports its recommendations to the Council on Medical Education of the AMA for a final decision.

There are approximately 60 programs now accredited, most of which have their accreditation in primary care. The only program accredited in Connecticut is the Physician's Associate Program at the Yale University School of Medicine.

Paul F. Moson, P.A.

Executive Director
Physician's Associate Program
Yale University School of Medicine

**Includes all types of physician's assistant programs in primary care, surgery, or other specialties.*

Towards Better Bacteriology

The Report of the Ad Hoc Committee on Microbiology Laboratory Utilization, appearing in this issue, is a welcome contribution toward controlling rising costs of medical care. The Committee, chaired by Raymond Bartlett, M.D., of Hartford Hospital, has proposed certain guidelines for taking, transporting, preserving and processing specimens; if these are followed there will be more useful testing on fewer specimens.

Some of the recommendations are noncontroversial, such as the guidelines for specimen handling and the indications for anaerobic cultures. Some are moderately controversial, as reporting "mixed flora" when appropriate, or omitting speciation of organisms found in "clean-catch" urine specimens under certain conditions, or refraining from culturing sputa in which squamous cells but no neutrophils are seen on smear.

The most controversial and most important recommendations are those which limit the clinicians' options in ordering tests. These include:

1. Controls for test utilizations to be established by a medical staff committee.
2. A maximum of four blood cultures a day be collected, at intervals ordinarily not closer than one hour.
3. Criteria for antimicrobial sensitivity testing to be set in the laboratory rather than on the basis of physician requests.

Hospital laboratories in Connecticut are presently caught between the Scylla of cost control through the Hospital Cost Commission[1] and the Charybdis of increased request for tests from clinicians. There is little doubt that this dilemma can result in an unhappy adversary position, in which laboratories will be forced to "ration" tests while clinicians will demand that their orders be honored. The approach of cost containment agencies by the force of practical considerations will be to limit the overall laboratory budget. In some laboratory areas there is still opportunity by increased automation and computerization to produce more test results at lower cost. In Microbiology these cost-cutting opportunities do exist and are avidly seized upon, but they are considerably less than in other laboratory disciplines.

It is imperative that physicians generally involve themselves personally in these cost-control endeavors with a scholarly attempt to set minimums of necessary testing rather than maximums which can be demanded. There are myriad opportunities for ordering appropriate medically necessary examinations in place of routine, repetitious, often pointless tests which cannot be interpreted or which contribute no significant information.

The Committee recommendation for establishing a hospital committee in Microbiology should be implemented as a first step towards making medical usefulness rather than technical possibility the major factor in laboratory utilization.

Roy N. Barnett, M.D.

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[1] Public Act No. 73 - 117; *Connecticut Medicine, 37:* 471-474, September, 1973.

Report of the Editorial Committee of Connecticut Medicine

A little more than two years have passed since the format of the Journal was changed, with "new directions"—a sign of a new Editor. From those who read the Journal, casually or intensively, I intuitively feel that they believe the new makeup and style are more attractive. At the last meeting of the Editorial Board, the membership unanimously agreed it did not want to revert to the old format.

But format means structure and plan, not substance and content. And it is to the latter that I wish to address myself briefly. I preface by saying that if any Editor of your choosing becomes content or self-satisfied, you should vote him out forthwith. If he becomes oversatisfied with the medical status quo, events in the science and practice of medicine, with their many interfaces with other fields of knowledge, will pass him by.

The resignation of three members of the Board during the past year brought up some questions. A member of the Council asked the Editor, "What do you look for in a member? What criteria should the Council use in nominating and filling vacancies?" First, let me say, of the three, that one resigned to become Chairman of Anesthesiology at Boston University Medical Center—Dr. Frederick W. Hehre, one of our most stimulating and helpful members. One resigned from the State Society, and another did not have time to participate in Board meetings. The bylaws say essentially that the job of the Board is to monitor the quality of the Journal. By the editorial content of the Journal the Board means everything between the covers (including advertisements) that contributes to quality or the lack of it. Selection of membership must also take into account the geographical and specialty distribution of members.

Anyone who wishes to become a member may submit his name. He can make known his desire to his councilor or directly to the Council or to the Editor. The Editor would hope that in addition to support of the Journal he is ready to donate an average of four hours minimum a month to editing or helping to prepare abstracts, summaries, or book reviews assigned by the Editor. Members are nominated by the Council and elected by this body.

The problem of how much the members should help the Editor now confronts the Editor and Council. This help is not provided for by the bylaws. Present members of the Board, although they are interested in the Journal and conscientiously fulfill the requirements of the bylaws, do not feel this extra work lies within their responsibility. The most they are required to do is to review articles for the Journal, in addition to a few other duties not requiring substantial amounts of writing or editing.

As for the need to be constantly prepared psychologically for change, it is a characteristic of our profession of medicine—be it in research, teaching, or practicing of any type—that makes it different from most other professions. Ours is based on science and is therefore constantly changing. One of our biggest problems is to bring the results of research to the bedside. Not only that: this changing knowledge creates social changes and new interfaces with society in general. As a result, our profession is in constant ferment within itself (witness the changing concept of treating cancer of the breast) and vis-a-vis society and its political institutions and representatives. A journal must keep up with this content and ambience with change, with the new. The answer that "we always have done it that way" is no longer sufficient answer to the changes that scientific research, particularly biological, bring to the practice of medicine. This does not mean that we who practice should go from black to white, but it does mean that we should have a certain elasticity of thinking and a willingness to examine critically all attempts at innovation. Let me briefly tell you how it affects a journal, particularly ours.

We physicians are becoming swamped with all sorts of information—scientific, social, economic, and political. Our problem is not to read it all but to decide what we should read, skim, or ignore. With this mass of material, much of it excellent, we ask ourselves if our State Journal is necessary. After more critical thought as Editor, I say yes, and, given enough time and the proper forum, can make a good case for *Connecticut Medicine*. If there were none, we would create one. Our format still goes—(1), scientific, (2), paramedical, (3), Society business.

Presuming that it is of and for Connecticut, we should start off with Society business. It is Society business and medicine in Connecticut that make our Journal unique and different from all others. But we must differentiate between the kind of news appropriate to a newsletter and the kind appropriate to a journal. A newsletter by definition is timely, less in-depth, reportorial in tendency—a "throw-away." A journal addresses itself to matters of permanent interest, is exhaustive in its treatment of its subjects, and is rigorously scientific and historical in tendency. We need both, sometimes on different facets of the same subject. In this day of ever new and ever more complex laws related to medicine, both state and federal, that affects us in daily practice, should they not be presented in both ways? Are they not permanent and historical as well as part of the day's news? One member of the Council commented on my publishing the entire United States Supreme Court decision on abortion—without comment or editorial. It was the first time he had read an entire U.S. Supreme Court decision; he said it was valuable and educational, especially to examine how the justices reasoned. I did the same for the PSRO amendment; one member appreciated it and kept it for his files.

But even during the relatively short time of two years, I have gradually changed what I think should be the Journal's emphasis. (Editors concern themselves with content as well as style and makeup). Our financial resources limit some aspects of this.

I now think that our Society business becomes more important—that it should be written interestingly, historically, more completely; that although there should be a newspaper approach, the Journal should treat such news at a different pace and more comprehensively. There is room for both. I believe that a good index of the vitality and excellence of an organization such as ours is its communication, especially among its members. If there is a limitation to money and the budget (and there is in ours), then I believe that relations with our members take precedence. Only secondarily should we think of what we write in terms of its links to the public. I for one have almost given up on getting the message of physicians through the media to the public.

Most of the writing and education going on in our state does not appear in the Journal. Much of it is directed to national and specialty journals, and in verbal communication at meetings and conferences. But the same subjects should be written for our Journal, in a different style, one that is directed toward the practicing physicians, so that they can know what is going on in other specialties and, most important, to bridge the gap between research and specialist on the one hand and patient care by practicing physicians on the other. The idea expressed here, briefly, will require a change in thinking about science articles in the Journal by those who write and teach, especially by the university medical schools and by the large teaching community hospitals. It so happens that, in our state of Connecticut especially, physicians who go to smaller community hospitals are specialists and well trained. I hope they will realize that articles and reports by them about what is going on in their hospitals is not only educational, but of interest to physicians in other hospitals and parts of the state.

I will not report very much to you about the paramedical section. Unless the members tell me otherwise, articles on law, ethics, legislation, education, history—in fact any subject related to and interesting to medicine—will be deemed worthwhile.

Although I had served on the Editorial Board for some years under Dr. Nahum, I found that this was not very much training for being Editor. There are many details requiring expertise, best learned as an apprentice. I am still learning, but there is much to learn. I have learned, from other editors and experts, that the editor of a publication must be "boss," the final arbiter of all decisions as to the contents of the Journal, though subject, to the Council and to the House of Delegates as analogues to publishers, most of whom do not have the time nor the need to learn the essential editorial details of a publication.

It has become a one man job, something neither sought nor desired by me. I have already asked two members of the Board if either would consider being an associate editor. Neither has the time. I cannot do the job alone and put out a journal we all can refer to with pride. This is a problem for the Council and for me to discuss and to solve in the near future.

I ask you delegates, as leaders of our Society, to make suggestions, to be patient, to support reasonable changes, especially of those items which have no more reason for existence than that they have been done that way for years. I am committed to constant improvement; that means change, and I don't have to tell you what change does to some of us.

You delegates could do no greater service to the Journal than occasionally to go through it section by section, critically, and submit suggestions and criticisms to the Editor or to the Council. Some of my friends have said that I am a perfectionist as far as the Journal is concerned. If I am, I make no apologies for it. I shall make every issue as good as possible. Though the buck must stop at my desk, I realize the Journal does not belong to me. This is your Journal. It belongs to the Council, the House of Delegates and to the Society members. Basically, it appears our Journal stands up quite well with other state medical journals, but we are not satisfied with that. The more you participate in making suggestions for it, and criticizing it, to the Editor, the more it will be *your* Journal, and a better Journal it will be.

Report submitted by: J. Alfred Fabro, M.D., Editor—Annual Meeting House of Delegates, April 30, 1975.

Malpractice: Where Is It Taking Us?

Roger O. Egeberg, M.D.

The gross injustice that permeates the malpractice scandal goes far beyond its awful cost. It certainly encompasses the accusations in a public court, the insulting and demoralizing character destruction of doctors in these adversary proceedings—proceedings which were carried out against 700 innocent doctors in this past year. It includes the image that adds additional worries to doctors' problems in practice every day, and thousands of claims or suits settled because of a great reluctance to go to court.

As most of you probably know, it is costing the country roughly a billion dollars in premiums for hospitals and doctors this year and it is costing the country somewhere between $2 and $7 billion in defensive medicine. This total cost of $3 to $8 billion is netting the patients who have been injured or who think they have been wrongly treated about $300 million a year. This horrendous bill and the proportionately small amount of it that reaches an injured patient would certainly be labeled scandal if it were in the Government.

Why do we have this problem and what can be done about it? We have the problem because our society has changed and because medicine has changed. Society in the past couple of decades would seem to have adopted the attitude that anybody's misfortune, whether caused by his own carelessness, by pure accident, or by carelessness or ignorance of others, should be recompensed with money. Where this money should come from is unclear. But if it is on the horizon, a large corporation, insurance or otherwise, or an individual considered wealthier than others, such would seem to be the first to be asked to contribute.

Along with this change in society's attitudes are the changes in medicine that have come with research and specialization and the newer methods for diagnosis and for treatment. There is also the increasing pattern of a patient having to see a specialist who becomes very important to his well-being and to his health, and who he may see only three or four times. This is short contact and if the specialist, in turn, should see him as a diagnostic problem or an operation rather than as a person with a problem, one has created a situation where a patient is angry with a stranger.

Outside of medicine, the companies insuring doctors against malpractice rather suddenly found their reserves and surplus markedly lowered with a rather quick fall in the stock market.

At the same time, there evolved a subspecialty of law that became very proficient in choosing cases, in painting pictures and in persuading juries or judges to be utterly unreasonable in some of their judgments. In addition to these two major influences, the newspapers kept the public aware of suits for $5 million, $10 million, $100 million, $400 million or a billion dollars, neglecting to say that most of these got nowhere except in the newspapers and that half of all suits instituted are dropped in the first discussion between lawyers. Increasingly, therefore, people have begun to wonder if they don't have somewhere in their medical experience a ticket that might pay off in this fantastic lottery.

I needn't remind you of what this has done to malpractice premiums or even to the problem of obtaining malpractice insurance. But whatever the situation, doctors are increasingly distressed, resentful and angry over having to pass this much added cost on to their patients or the taxpayer, or as they must surely have done, absorbing an increasing part of it themselves.

Call it a dilemma, a crisis, a mess, or a scandal—it is our malpractice problem. It is before us with great need to be solved. What can we do about this? Or since I view this from the Federal point of view, what can and should the Federal Government be doing about this and what should the medical profession be doing?

This Administration feels that the Federal Government should not enact laws on malpractice unless the cost goes up much more without State intervention or if insurance becomes unavailable in the State. Doctors and hospitals are licensed by States and State Insurance Commissioners regulate the insurance companies, so it is a State affair. The Federal Government, however, is in a good position to do certain things that can help in solving this problem. has taken these actions:

Mr. Caspar W. Weinberger, Secretary of Health, Education, and Welfare, has had seven meetings with doctors, insurers, insurance commissioners, State legislators, defense lawyers, plaintiffs' lawyers, and some combinations of these. Many of these had not met together before to discuss the problem. Secondly, we can gather information on the status of the problem and create a clearinghouse of information. This we have begun to do and we can help to see that information of a medical nature is tabulated as insurance companies close out their cases.

Such information dealing with causes would be basic to the programs aimed at reducing the incidents

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DR. ROGER O. EGEBERG, Special Assistant to the Secretary for Health Policy, Department of Health, Education, and Welfare, Washington, D.C.

or the injuries that bring about malpractice claims. We can help bring together information for hospitals and offices as to kind and incidence of injuries occurring there. We can encourage the States to give authority and protection from suit to official bodies evaluating doctor conduct where such evaluations would seem to be indicated.

All of this is certainly important, but it is impossible to estimate whether this covers 25% of the cause of the crisis or 50% or more or less. In the near term, one must tackle the matter of the handling of a malpractice case. This is a State mechanism and this is something where the doctors, properly advised with the help of the population as a whole, and particularly labor, can and should have influence.

It is here where the targets get confused or where they may well differ from State to State. It is among these targets that one finds so many supporters who feel that the correction of one thing will solve the problem. Contingency fee, statute of limitations, admissibility of collateral source payments into evidence, a cap on awards, the elimination of ad damnum, a reasonable assessment of informed consent, the possibility of using a screening panel, the use of binding arbitration, of special judges, of a Workers' Compensation model—certainly put together, these various facets of the handling of a case loom very important in the solution of the problem.

How can you hope to get action on these from State legislatures with so many harassing problems facing them, and so often made up of a preponderance of lawyers? You can march, you can withhold services, you can talk frenetically among yourselves about the awfulness of the situation, or you can do what Indiana did. Indiana got expert legal counsel, some excellent lobbyists, and then went to the people of the State, to the labor organizations and to their own patients, and told them what the overall problem was. The result was a law which, though its constitutionality may be questioned, includes a definite statute of limitations, a cap on awards, a screening panel, a patients' compensation fund and elimination of ad damnum.

Further down the road, where is all of this leading us? The problem certainly has to be brought to the attention of the people, to the people who obviously are paying the awful bill and who would want to see the issue handled more efficiently and with greater justice—first to the injured patients, so many of whose injuries hardly warrant a lawyer, and with justice for the physician.

I see a lot of marches in Washington from my window and not infrequently see 50 or 100 buses from various parts of the country. They get up on the Capitol steps which are tremendous and make speeches to themselves while runners go in and try to bring Congressmen out to listen and to say a few words of their own. They make the paper— they used to make the front page—but I often have to look near the want ads now to find who occupied those buses I saw yesterday. Perhaps they raise the moral of the bus riders—but not much else.

The withholding of services or the slowdown of services, the taking of only emergency cases, no matter what you call it, the newspapers will call it a strike and people will consider it a strike and after a few days, will apparently consider it a strike against them. The withholding of services or the caring for only emergency cases, if continued for a definite three or four or five days with the avowed purpose of bringing everybody's plight to the attention of the legislature so it might act, might be called a slowdown and might jar the legislature. If doctors strike, they will strike because they are mad at the plaintiffs' lawyers, mad at what they consider their greedy and self-serving practices in a number of the large figure cases, because they are angry and frustrated—but the people will hardly see it that way.

I doubt the judges will help you, nor the insurance companies nor the insurance commissioners. The ones who can really help you are the people and it is the people who must get your message, and they will probably hear it better if it isn't delivered during a strike. That I think is your job and one that needs to be approached quickly in at least eight or ten of our States.

Get good advice—remember more is usually won by compromise, don't forget that a law if arbitrary can be reshaped by judges' decisions. It is difficult for doctors to accept compromise in arriving at a diagnosis or in treatment of a patient and when this attitude is expressed in a broader societal framework, it is often considered an ultimatum. A sense of what is of the first, second, and third order of importance is necessary in the pragmatic approach to so complex a problem as we face.

There is malpractice, of course, and there are doctors whose conduct is questionable or inexcusable. For the sake of their patients and certainly to keep faith with the public, they must be brought to light, evaluated and punished. This may require legislative help and your support.

And now still further down the road, what is happening to medicine? What is happening to us in our own image and the image of the people if we strike? What is happening when we feel we have to do unnecessary tests, X-rays, call for unnecessary consultations, just to be sure we're covered in case of a malpractice case? What happens to ourselves and our image when in our first contact with a patient, just as we are trying to establish that good rapport so necessary an adjunct to good therapy, if at that time in the back of our minds is the thought, maybe this is the fellow who is going to sue me? What happens to good medicine if in trying to comply with informed consent, we feel constrained to tell patients at a time of their greatest worry: "Sure, this may kill you, it may cripple you, and I can't assure you at all that I'm going to save or help you." This latter I know is already beginning to happen. Are we any longer a profession when these things have happened? Or are we a group of health technicians with blinders on, with fear in our hearts, and with a deep hurt to our love?

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

HUMAN-SEMEN BANKING

To the Editor: Dr. Frankel's article in the May issue entitled "Human-Semen Banking: Implications for Medicine and Society" was superbly focused on a non-event. His report that semen banks increased in numbers from ten to sixteen in the last four years left this observer unshaken about the basic structure of our society.

The proposal that the availability of semen banks will "persuade immature and poorly motivated individuals to undergo vasectomy" also seems exaggerated. The opposite may be true. Immature and poorly motivated men do not seem to come in for vasectomy; instead, they become immature and poorly motivated fathers of large families.

One wonders how the costs of semen banking will increase when they have come under the "serious purview of a public policy making body." Why not just leave these small businesses alone and see how they do?

Anthony H. Horan, M.D.
Westport, CT.

The above letter was referred to Dr. Frankel, who offers the following reply:

To the Editor: In response to my article on "Human-Semen Banking," Dr. Horan concludes with the suggestion that we "leave these small businesses alone and see how they do?" If, as Dr. Horan clearly suggests, semen banks are to be considered "businesses" rather than a professional medical "service," then it seems to me that the medical profession has weakened any position that it might take against outside intervention. But more importantly, this view has been voiced time and time again by the medical and scientific communities—that is, if they could just be left alone, all would be well. Unfortunately, for society more than the profession, history clearly demonstrates that self-regulation by the medical profession has frequently been a dismal failure.[1] Moreover, since semen-banking may have social and biological consequences which extend beyond the doctor-patient relationship it should be subject to the same means our society used for "allocating values" and "promoting the general welfare" with respect to any other issue.

In response to Dr. Horan's other comments, I would like to make the following observation. The intent of the article was to bring to the attention of readers the actual *and* potential consequences of semen-bank technology. The *only* consequence that was referred to by Dr. Horan was that regarding the possible persuasion of poorly motivated individuals to undergo vasectomy. Please note that the original quote came from a National Medical Committee, not this author, and that Dr. Horan made no attempt to argue with the logic of the argument. Certainly it is possible that the original statement is "exaggerated," but then again it might not be. Why wait, as we have so often done with respect to new technological developments, until the "horse has been left out of the barn"? We need more thoughtful consideration, by both the profession and the public, regarding the use and *value* of new technology. In my mind, semen banking is one such example and I hope that other readers will recognize the importance of promoting a dialogue on this issue with members of their communities.

Mark S. Frankel, Ph.D.
Assistant Professor, Political Science
Wayne State University
Detroit, Michigan

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[1] For much more on this than space permits, see Eliot Freidson, *Profession of Medicine* (Dodd, Mead and Co.,: New York, 1970).

X-RAY PLATES

To the Editor: I enjoyed reading the article on rheumatoid disease in the June issue of *Connecticut Medicine.* This was written by Robert B. Zurier, M.D. from the Department of Medicine, University of Connecticut School of Medicine. However, I was surprised to learn that X-ray plates are being used at the medical school.

I have been in radiology for over thirty years and the only time I have seen an X-ray plate was in an X-ray museum. Glass plates were used by photographers at the time of the discovery of X-ray and were therefore used by the early radiologists. Glass was supplanted by film at about the time of World War I and has not been used since. However, I see that in the paragraph on radiology of rheumatoid disease. Dr. Zurier describes the finding on X-ray plates. This must represent a giant step backward in radiology, since I can't see how an X-ray plate would go through a modern film processor.

John Burbank, M.D.
Meriden, CT.

The above letter was referred to Dr. Zurier, who offers the following reply:

To the Editor: The word plate was used in the sense an illustrator might use it. Dr. Burbank is of course correct that film is a more accurate term and the sentence should read, " . . . on one film." My thanks to Dr. Burbank for his delightful letter and for stating he enjoyed the article.

Robert B. Zurier, M.D.
Farmington, CT.

"For when was honey ever made with one bee in the hive"...

Thomas Hood, *The Last Man*

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The Respiratory Control of the Heartbeat
The First Louis H. Nahum Lecture*
(Second of Two Parts)

Hebbel E. Hoff, M.D., Ph.D., Bonnalie O. Campbell, Ph.D., and Stephanie Deavers, B.A.

Part II
Introduction

The relation of the heart to the lungs, and of the act of breathing to the circulation, was postulated by Harvey himself when he wrote that "The right ventricle is made for the sake of the lungs and for the transmission of the blood through them." Both Stephen Hales and Carl Ludwig had noted the effect of breathing on the circulation and it has been natural to seek in the act of breathing a control mechanism which in teleological terms might so regulate the heartbeat that the greatest perfusion of the lungs takes place during inspiration when fresh air is filling the lungs. Studies of this relationship in the Elasmobranch *have been reported in the first part of this Nahum Lecture series, along with evidence that much the same relationships can be uncovered in sheep when the vagus is potentiated by chloral hydrate to slow the heart, as well as in the dog where a similar vagotomically slow heart rate was produced by morphine sulphate. In this section another technique, that of the intravenous infusion of calcium chloride, is examined.*

IV. Intravenous Infusion of Calcium and the Respiratory Heart Rate Relationship in the Dog

Among the many effects of an increased concentration of serum calcium on the cardiovascular system reported many years ago by Hoff, Smith and Winkler,[15] three are of particular interest in connection with the respiratory heart rate relationship: Cardiac inhibition of vagal origin was one of the earliest and most constant manifestations, including both slowing of the heart rate and all degrees of A-V block. At times the two effects were isolated; profound slowing without block, or total block with a virtually normal atrial rate were both seen. Calcium concentrations required for these effects were close to three times the control level. The second effect of increased calcium concentration was that the initial phase of slowing was succeeded by a period of enhanced automaticity, sometimes expressed as an acceleration of the normal S-A mechanism, but more frequently by the appearance of escape beats from either the A-V junction or the ventricle, often in the pattern of bigeminy. This was followed by runs of nodal or ventricular tachycardia from single or multiple foci, terminating in ventricular fibrillation in half of the experiments. The first signs of enhanced automaticity appeared at serum calcium levels close to 48 mg percent, and signs of ventricular fibrillation at an average calcium concentration of 60 mg percent. This was followed by a third and final stage in which surviving animals exhibited a second period of slowing, apparently not of vagal origin, and succumbed to cardiac arrest at an average serum calcium concentration of 113 mg percent. A fourth aspect of calcium intoxication, not seen by Hoff, Smith and Winkler[15] was an enhanced susceptibility to atrial fibrillation associated with the early vagotonic phase of calcium intoxication. As in the case of chloral hydrate and morphine administration, the vagotonic state appeared to be of central origin.

A control record of a morphine pentobarbital preparation in which there were regularly three beats of normal supraventricular origin with each breath are shown in Figure 17. This simple relationship was not always maintained (Figure 18), and the linkage between respiration and heart rate was not absolute. Two closely placed beats accompanied the first breath, two beats appeared somewhat farther apart and both earlier in the second respiratory cycle, while three beats appeared with the third breath. The process was then reversed reestablishing in the last breath the same pattern as seen in the first. It is sometimes difficult to assign beats to a particular breath; in this case the decision to assign the triple beat to the third breath was based on the fact that the interval separating this triplet of beats from the next point was longer than any interval within the triplet.

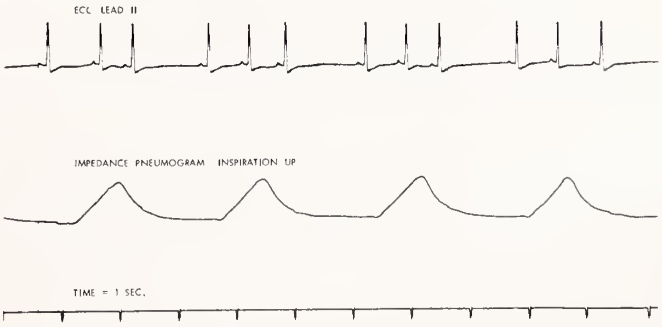

Figure 17

Morphine-pentobarbital preparation. Part of control recordings for later calcium infusion showing a 3:1 relation between heartbeats and respiration.

DR. HEBBEL E. HOFF, Professor and Chairman, DR. BONNALIE O. CAMPBELL, Assistant Professor of Physiology and MS. STEPHANIE DEAVERS, B.A., Instructor in Physiology, all of the Department of Physiology, Baylor College of Medicine, Houston, Texas.

**Delivered by Dr. Hoff and sponsored by the Department of Physiology, Yale University School of Medicine.*

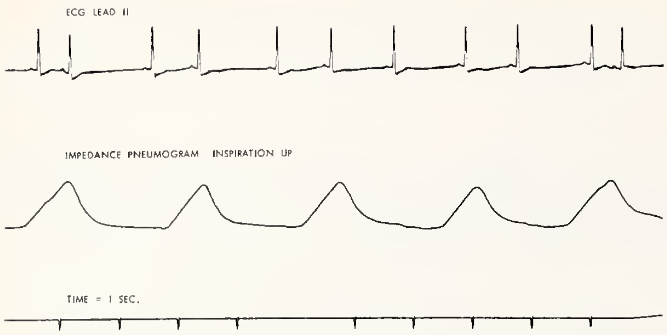

Figure 18

Same preparation as in Figure 17. Control recording continues, showing one cycle of a recurrent pattern in which a third beat is added to the usual pair once in every five breaths.

The morphinized dog is particularly prone to take frequent, deep, or sighing breaths after which there is often a variable period of apnea and a gradual increase in amplitude of breaths as they return.[16] Figure 19 illustrates this phenomenon. In this animal there was a regular two-to-one relationship between heart rate and breathing with the usual eupneic breaths. The deep breath, on the contrary, released five heartbeats and was followed by a period of apnea with heartbeats at a slow rate. Thereafter there were four small breaths, each evoking a single beat, after which the breaths returned to their previous amplitude, and the 2:1 ratio was reestablished.

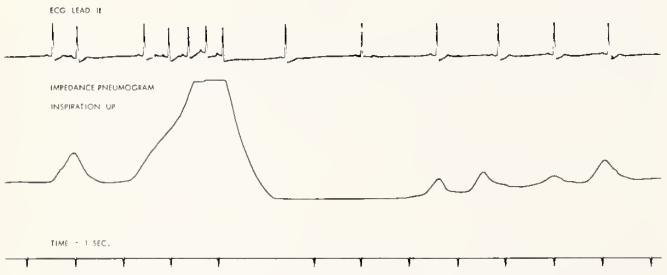

Figure 19

Morphine-pentobarbital preparation. Control for calcium infusion. After a usual sequence of paired breaths with each eupneic breath a deep, all-or-nothing breath is taken, associated with five heartbeats. In the subsequent period of apnea two heartbeats appear. When breathing then begins there is one beat per breath, for the first four, smaller than normal, breaths. After this the normal amplitude of breaths is reestablished and the 2:1 relationship returns.

As calcium infusion was started, the vagal effect appeared almost immediately (Figure 20), with a 1:1 ratio for six breaths followed by a seventh breath which released two beats. Ventricular ectopic beats appeared twice. They must have been of the escape variety, as the generalized slowing of the S-A mechanism gave the ectopic ventricular pacemaker time to express its own automaticity. With continuing calcium administration the rate of respiration slowed, and with it the heart rate (Figure 21). At the peak of each inspiration a single supraventricular beat appeared. The overall rate was slow enough for a ventricular escape beat to appear at a quite constant interval after each preceding normal beat. In Figure 22 the respiratory rate varied, much as though a respiration were dropped out between the first and second breaths, for the interval was close to that of the next two cycles combined. Nevertheless the atrial rhythm followed faithfully the pattern of breathing. Although an atrial beat was elicited by the third breath there was no following ventricular beat; the escape beat, conducted antidromically toward the atria, no doubt interfered with the orthodromically conducted beat in the A-V junctional system. A more extreme example of this phenomenon is seen in Figure 23, where the first atrial impulse after the period of respiratory arrest was again blocked. The next atrial beat followed the escape beat at a slightly longer interval and was conducted to the ventricles.

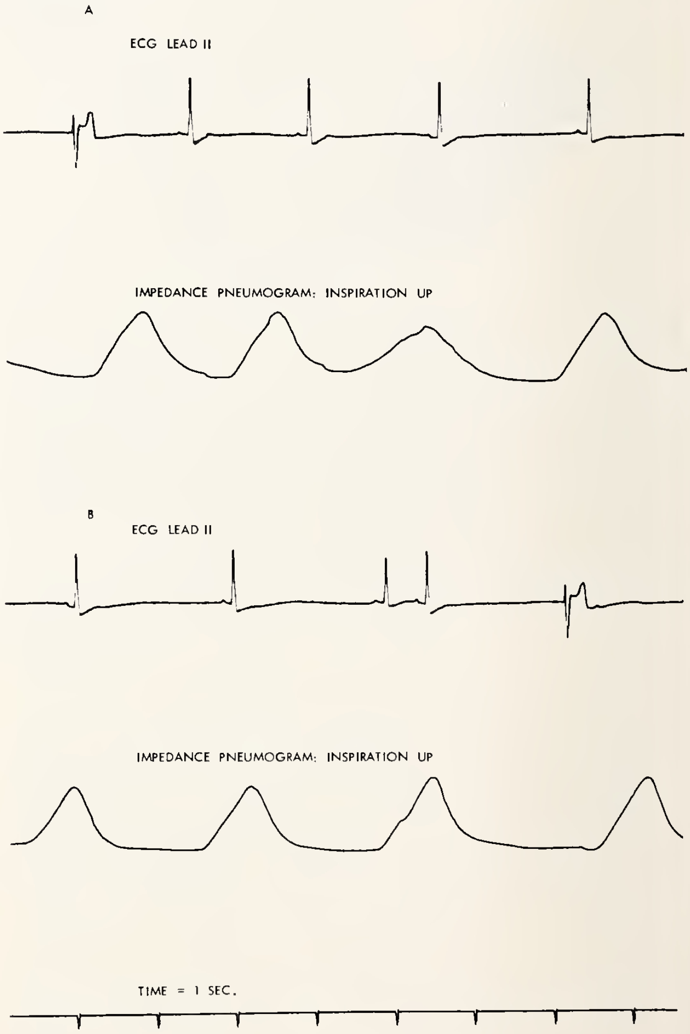

Figure 20

Morphine-pentobarbital preparation. Calcium infusion starts, almost immediately producing vagal slowing, with a 1:1 heartbeat-respiration ratio (except for two beats with the next to last breath) and ventricular ectopic beats, presumably of the escape variety.

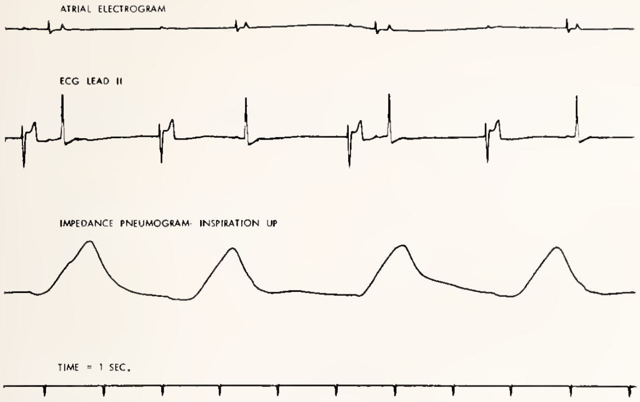

Figure 21

Continuation of the same experiment. Respiration and heart rate are slower; there is a regular 1:1 ratio of heartbeats to breaths, and a regular ventricular escape beat in each cycle.

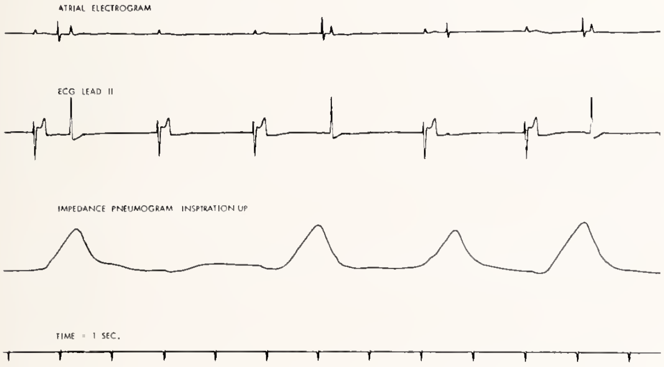

Figure 22

Continuation of the same experiment. A 1:1 heartbeat-respiration ratio is maintained despite variations in respiratory rhythm. This record suggests strongly that respiration is the controlling factor, as postulated in this presentation.

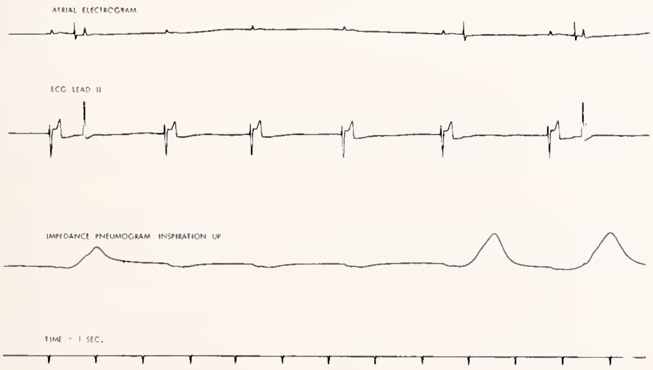

Figure 23

Continuation of the same experiment. An extreme example of a 1:1 relationship controlled by respiration. There is no ventricular complex after the atrial impulse associated with the second breath, presumably because of refractoriness at the A-V bridge or interference by retrograde conduction of the preceding ventricular escape beat.

The preparation began to take on the pattern of the dogfish as vagal tone increased. As seen in Figure 24 an occasional breath failed to elicit an atrial beat. An atrioventricular beat accompanied each breath except for the breath in the center. Here, as in the last figures and those to follow, the escape beats combined to form an independent ventricular rhythm, thereby maintaining the circulation and permitting the further development of the calcium effect.

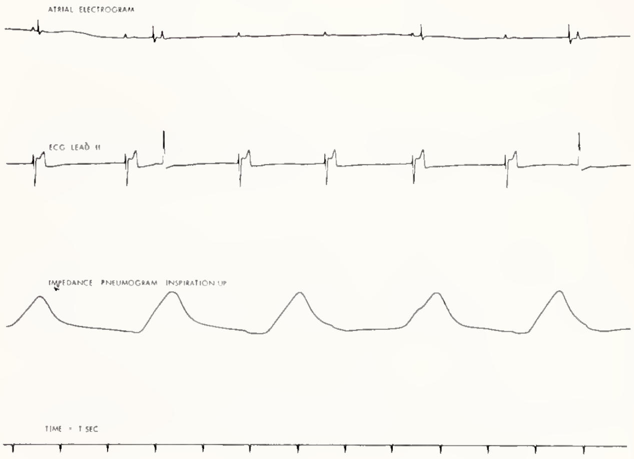

Figure 24

Continuation of the same experiment. An occasional respiration fails to elicit a heartbeat. The ventricular rhythm now maintains the cardiac output.

The dog then settled down to the almost typical dogfish pattern of one normal heartbeat for every other breath as shown in Figure 25. Twice, the orthodromically conducted beat did not elicit a ventricular beat. In Figure 26 the ratio had fallen to three respirations per heartbeat; none of the atrial beats were blocked, and the main burden of the circulation was now borne by a well-developed idioventricular rhythm.

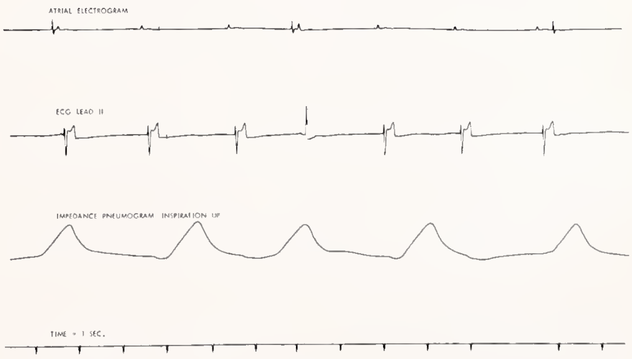

Figure 25

Continuation of the same experiment. Every other breath fails to elicit a heartbeat, reproducing in the mammal the usual pattern of the dogfish of one heartbeat for every other breath.

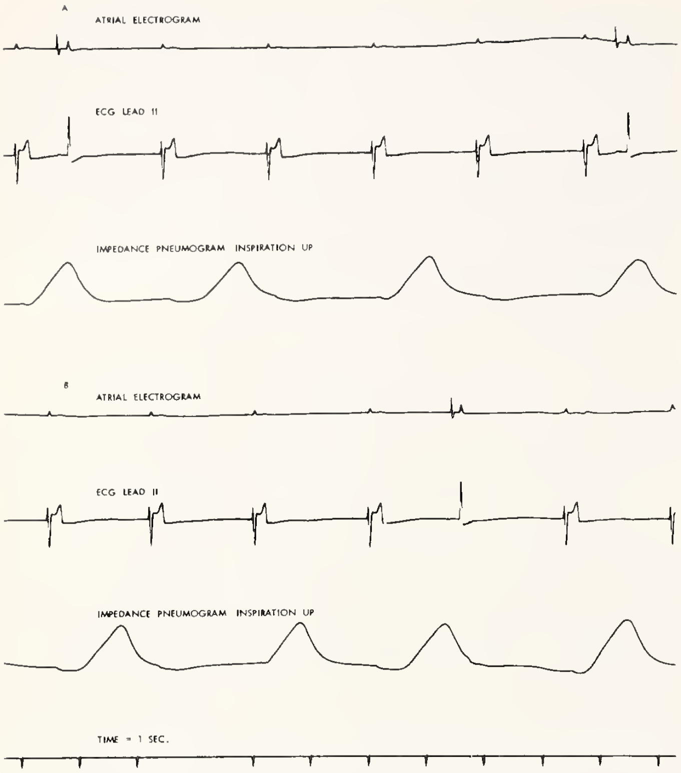

Figure 26

Two continuous records from a later stage of the same experiment showing only one heartbeat for three breaths.

Somewhat later, the ratio of breaths to heartbeats rose from 3:1 to 4:1, nevertheless, when a deep breath was taken (Figure 27) five atrial beats were released and all, except the first, were conducted to the ventricles. Obviously, the whole series of events depicted here from Figure 24 on, resulted from a steadily increasing vagal tone of central origin which could nevertheless be suspended by the deep breath with its more powerful capacity for inhibiting central vagal discharge. Figure 28, a continuation of Figure 27, records the resumption of breathing during which the simple one-to-one relationship was restored momentarily. Thereafter, atrial slowing continued into periods of arrest. Figure 29, for example, followed a period of complete atrial arrest of 280 seconds. The figure shows the last normal breath, without any atrial response, but again the deep breath brought in four atrial beats, each of which was conducted to the ventricles. There was another short period of apnea which persisted into Figure 30, which is continuous with Figure 29. Here there was a second period of post-inhibitory potentiation in which most breaths again elicited one or two beats. After the final breath in the figure there followed a further period of 180 seconds during which the pacemaker was completely suppressed. In summary, two periods of pacemaker arrest persisting for several minutes were evoked on a purely neurological basis by extreme vagal discharge.

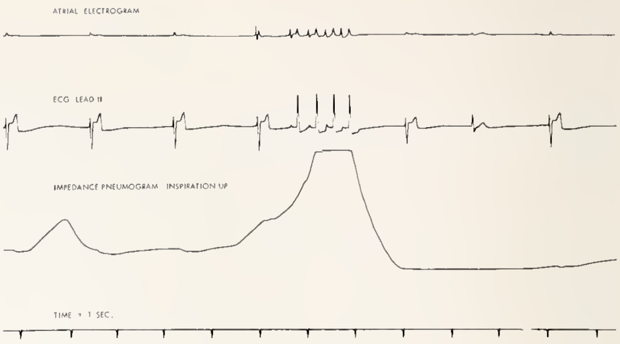

Figure 27

Continuation of the same experiment. After four eupneic breaths without heartbeats, a deep breath elicits five atrial beats. A ventricular escape beat blocks the first atrial impulse but the next four atrial beats are conducted to the ventricles.

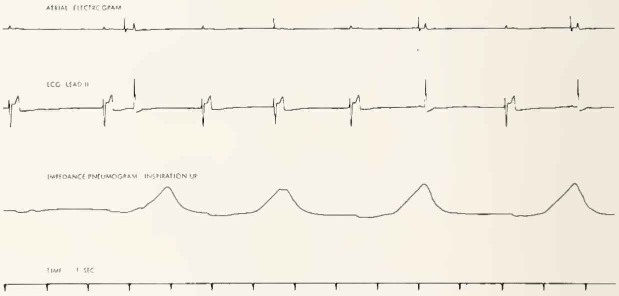

Figure 28

Continuation of the same experiment. After deep breaths such as in Figure 27 and the subsequent interval of apnea, there follows a period akin to post-tetanic potentiation, or perhaps more accurately, post-inhibitory rebound, in which a 1:1 ratio is temporarily reestablished.

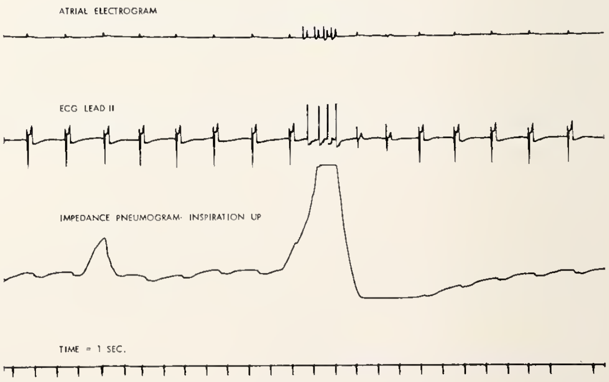

Figure 29

Continuation of the same experiment. Total pacemaker arrest occurs for 280 secs., after which a single deep breath brings in four atrial beats which are conducted to the ventricles.

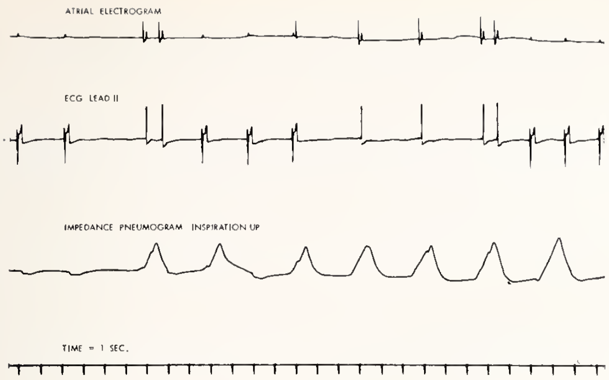

Figure 30

Continuous with Figure 29. A period of post-inhibitory rebound brings in seven beats associated with breaths, followed by further atrial arrest lasting for 180 secs. Thus with the exception of these beats the atrial beats are arrested for over seven minutes.

V. The Respiratory Heart Rate Response in Atrial Fibrillation

Immediately following the long period of pacemaker arrest described at the end of Section IV, atrial fibrillation suddenly developed. The pacemaker and atria now being effectively removed from control of ventricular rate, this function shifted to the A-V junction, and the powerful vagal influence was exhibited by total A-V block (Figure 31). A small dose of pentobarbital (1 mg/kg) reduced the strong vagal tone and made possible the resumption of supraventricular beats and the respiratory control of the ventricular rhythm via the A-V junction (Figure 32) with the characteristic paired beats seen with pacemaker control.

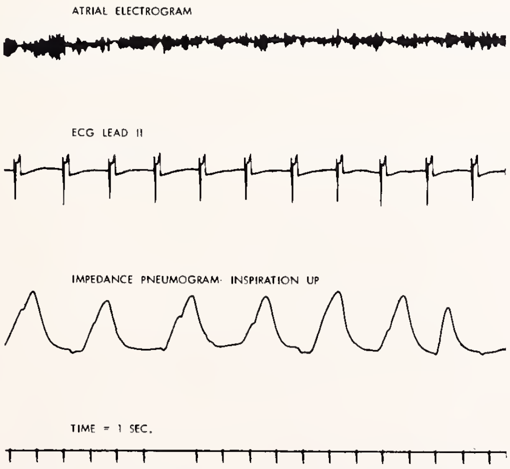

Figure 31

Continuation of the same experiment. At the end of the atrial arrest, atrial fibrillation begins, with total block. The independent ventricular rhythm continues as before, totally out of phase with breathing. In this case the strong vagal discharge is seen in operation at the A-V junction.

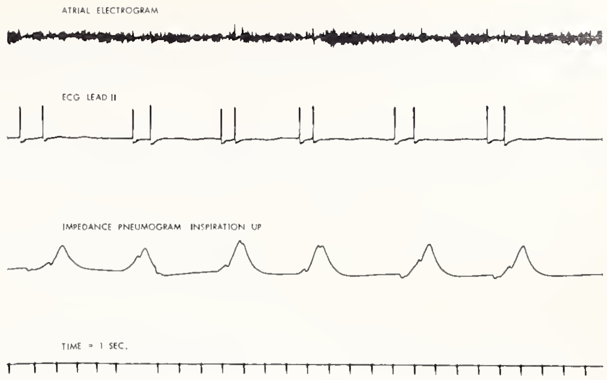

Figure 32

Continuation of the same experiment. Injection of 1 mg/kg of pentobarbital reduces the strong vagal tone, enough to permit two impulses to cross the A-V bridge with each breath, but not enough to suspend the atrial fibrillation. Ventricular escape beats disappear.

Figure 33 is a continuation of the same series; atrial fibrillation continued and three beats crossed the A-V junction with each breath. In Figure 34 a respiratory cycle dropped out while the paired heartbeats continued, and the next breath coincided with the next pair of beats as before. In Figure 35 two breaths were lost, while cycles of paired beats persisted.

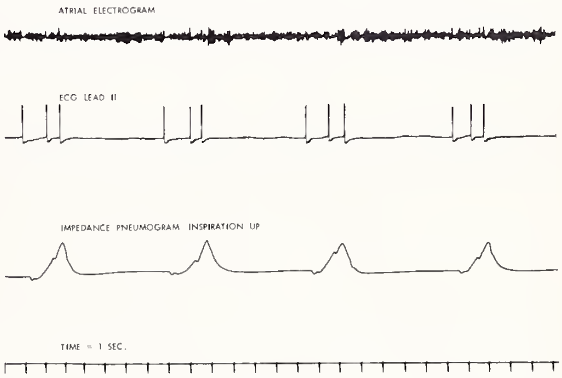

Figure 33

Continuation of the same experiment. A perfect 3:1 ratio of respiration to heartbeat is established. The ventricular pacemaker is silent.

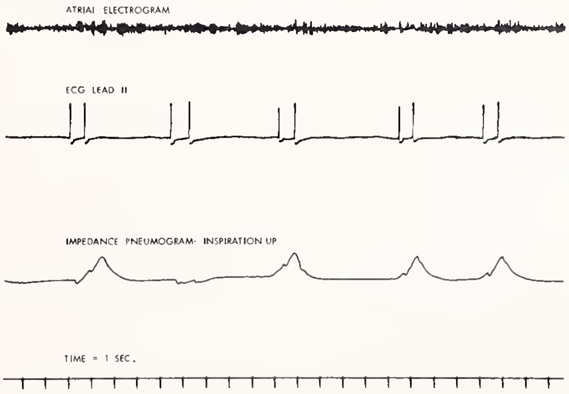

Figure 34

Continuation of the same experiment. Breaths now start to drop out, just the reverse of the previous phenomenon. Paired heartbeats continue nevertheless.

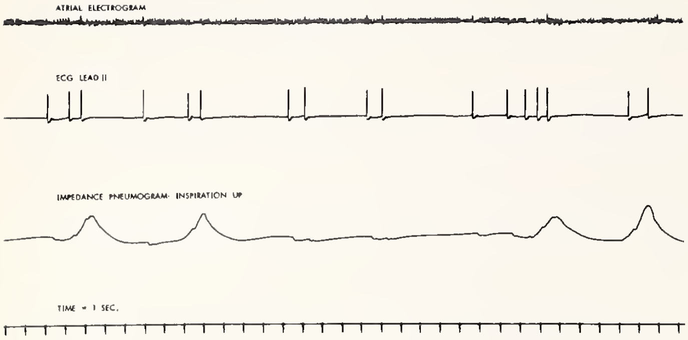

Figure 35

Continuation of the same experiment. Two breaths drop out from time to time, with continuation of paired beats.

With further administration of calcium and reversion to a normal atrial rhythm (Figure 36), each breath released four to five beats of supraventricular origin. The last two breaths were very weak if they were present at all, and subsequently (Figure 37) no overt breaths could be detected. Only the impedance cardiograms were detectable, yet the periodicity of heartbeats continued as before. In Figure 38, after ten absent breaths, but with maintained periodicity of heartbeats, breathing began again.

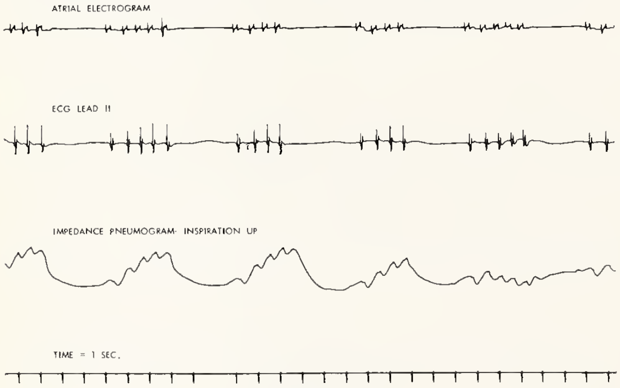

Figure 36

With continuing infusion of calcium and after spontaneous arrest of the atrial fibrillation each breath is associated with four or five heartbeats but at the end of the record the breaths suddenly decline, leaving only traces of the impedance cardiograms.

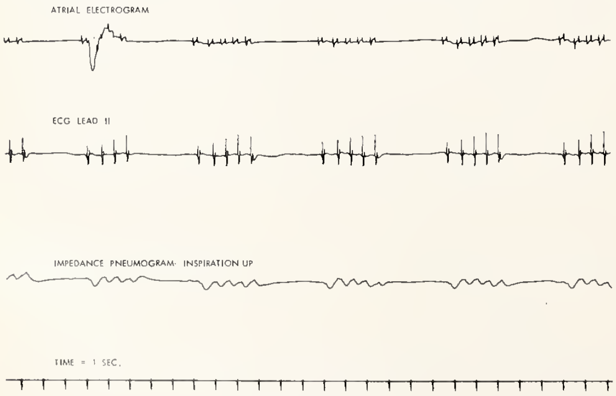

Figure 37

Continuation of the same experiment. No overt breaths can be detected, but the periodic bursts of heartbeats continue as before.

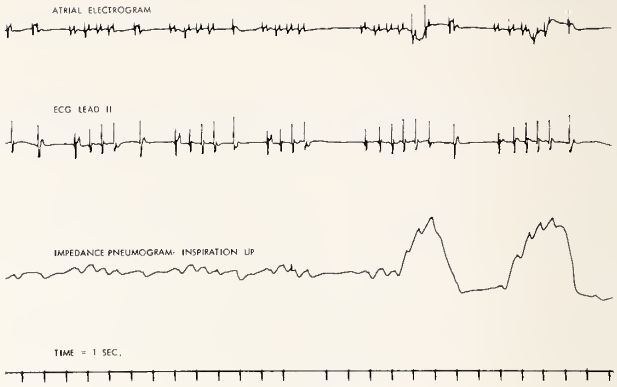

Figure 38

Continuation of the same experiment. Respiration is resumed, in proper relationship to the continued periods of heartbeats.

A suggestion as to the meaning of this relationship in which either heartbeats may drop out while breathing continues or breaths may drop out while periods of beats continue is found in Figure 8. In this recording, the sheep took a quick inspiration or "caught" its breath almost before the first had finished, and the "catch" breath released an additional beat. This suggests an increase in central excitability of the respiratory center at that time, which was only occasionally manifested in a breath, but nevertheless communicated with the cardiovascular center to diminish vagal tone and release a second beat. The second cycle of excitability seen in Figure 7 becomes therefore not an expiratory response but a response of the cardiovascular center to a potential inspiration even though no overt respiration is manifest. This is consistent with the findings of Breckenridge and Hoff.[16] [17] on transmedullary and reflex stimulation of the central respiratory mechanism in apnea. In apneic dogs, responses to such stimulation assumed patterns identical to those followed after resumption of spontaneous breathing. If such a pattern can be produced in apnea by stimulation either reflexly or directly, there must exist underlying mechanisms that determine the pattern of breathing even in apnea. There must therefore be processes that take place at a threshold level even when there is no overt mechanical expression in the physical act of breathing, and these presumably influence the cardiovascular center. A single "catch" breath in the morphine pentobarbital preparation is shown in Figure 39. Earlier and later breaths, of greater amplitude and more regular rhythm elicited two or three heartbeats; the premature breath elicited a pair of beats. In Figure 40 there were two of these small and rapid breaths in succession, each releasing a pair of beats. In Figure 41 there is a series of three such breaths; each was again associated with a pair of heartbeats. In view of the propensity of the morphine pentobarbital dog to develop tachypnea it might be suggested that these "premature" or "catch"

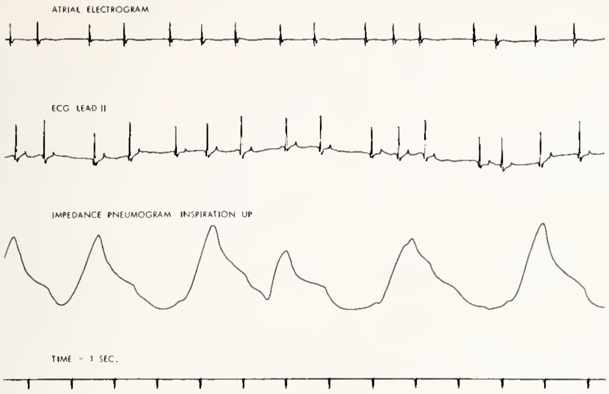

Figure 39

Morphine-pentobarbital preparation. A single "catch" breath similar to that seen in the sheep (Figure 8) is associated with a pair of heartbeats.

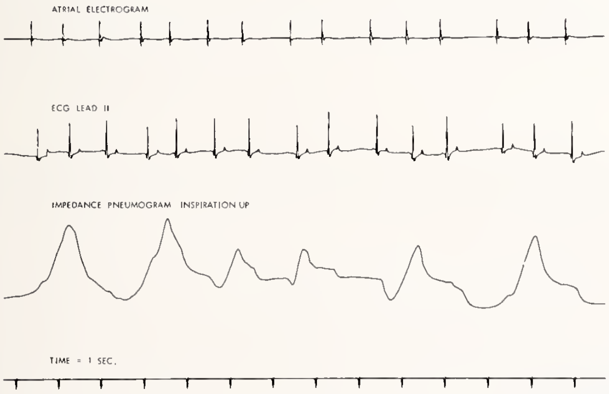

Figure 40

From the same experiment as Figure 39. Two small "premature" breaths each elicits a pair of beats.

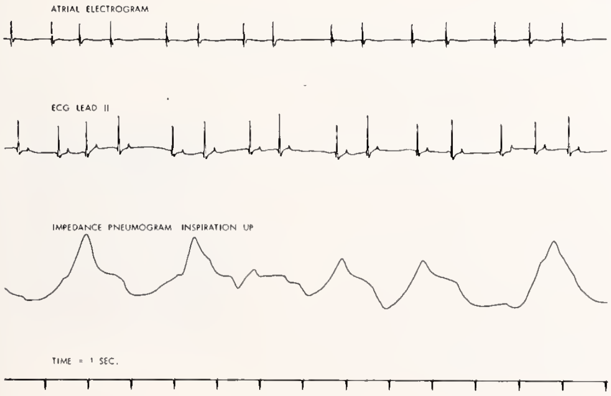

Figure 41

From the same experiment as Figures 39 and 40. Three premature, small breaths each elicits a pair of beats.

breaths represent the first stage in the development of tachypnea. A basic subthreshold mechanism for tachypnea may thus be present in the respiratory center and the continuance of periodic heartbeats without overt respiration may therefore result from interconnections between the respiratory and the cardiac centers. Thus a fundamental 1:1 ratio between respiration and heartbeat may be shifted in either direction. There may be more heartbeats or periods of heartbeats than respiration, as is the general case in the mammal. On the contrary, there may be more respirations than heartbeats, as in the dogfish, and as has been produced here in the mammal by intravenous infusion of calcium, well known for its powerful and central vagotonic effect.

The termination of an experiment with calcium infusion by ventricular fibrillation is illustrated in Figure 42. In this figure, after the normal beats associated with the first breath, a single ventricular ectopic beat appeared at a considerable distance from the last normal beat. Such an isolated beat would not be expected to evoke pacemaking in the ventricle, for which either a closely placed pair of ectopic beats, or the close coupling of a normal beat and a subsequent ectopic beat are required. This is exactly what happened at the end of the period of heartbeats accompanying the last breath. No more than two or three very closely placed ventricular ectopic beats were seen, and the ventricles fibrillated almost instantly. The complete mechanism of this fatal outcome is uncertain. Calcium may cause local changes in the myocardium fostering ventricular ectopic pacemaker development, and there is evidence that there may indeed be an element of sympathetic discharge during inspiration, as a reciprocal of the central suppression of vagal discharge which would then contribute to the development of the accelerating tachycardia, terminating in ventricular fibrillation.[18]

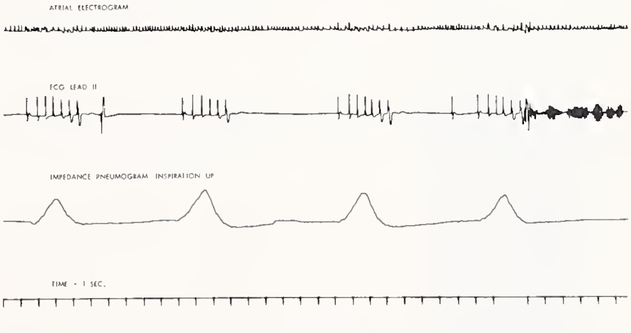

Figure 42

Morphine-pentobarbital preparation. Calcium infusion terminates in ventricular fibrillation.

Summary

In the experiments described above autonomic and respiratory imbalance was produced by chloral hydrate, morphine, and calcium infusion. All three agents appear to operate centrally. It may be supposed that other influences on the central nervous system might also produce alterations in the fundamental relationship between the breathing and the heartbeat. The results lead to the following conclusions:

1. Heartbeat is in part regulated by respiration;

2. This relationship is not absolute. It is mediated via neuronal connections and the cardiovascular centers, whereby vagal tone is diminished or suspended during inspiration;
3. The primary relationship is one-to-one: one heartbeat for each breath; and
4. This relationship is influenced by:
    a. the degree of basic vagal tone which determines the number of beats that are associated with each breath;
    b. the dropping out of heartbeats with the persistence of breathing as in the dogfish and the calcium-treated mammal; and
    c. the dropping out of breaths to give repeated periods of heartbeats in the absence of overt breaths.

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(This is the second part of a two-part article.)

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Essentials of an Approved Educational Program for a Surgeon's Assistant

On recommendation of its Committee on Emerging Health Manpower, the AMA Council on Health Manpower voted on February 15, 1974 to recognize the occupation of Surgeon's Assistant. As a result, the American College of Surgeons proposed to the Council on Medical Education the attached "Essentials of an Approved Educational Program for the Surgeon's Assistant," which upon review by the Council on Medical Education on March 15-17, 1974, are recommended to the House of Delegates for adoption. In the event of their adoption, the Council on Medical Education would collaborate with the American College of Surgeons in establishing an accreditation program for evaluation and recognition of educational programs meeting these minimum qualifications.

Objective

The education and health professions cooperate in this program to establish and maintain standards of appropriate quality for educational programs for surgeon's assistants, and to provide recognition for educational programs which meet or exceed the minimal standards outlined in these essentials.

These standards are to be used as a guide for the development and self-evaluation of programs for the training and education of surgeon's assistants. A list of these approved programs is published for the information of employers and the public. Surgeon's assistants enrolled in the program are taught to work with and under the direction of physicians in providing health care services to patients.

Description of the Occupation

The assistant to the surgeon should be a skilled person qualified by academic and clinical training to provide patient services under the supervision and responsibility of a surgeon who is in turn responsible for the performance of that assistant. The assistant may be involved with the patients of the surgeon in any medical setting for which the surgeon is responsible.

The function of the assistant to the surgeon is to perform, under the responsibility and supervision of the surgeon, diagnostic and therapeutic tasks in order to allow the physician to extend his services through the more effective use of his knowledge, skills and abilities. The assistant to the surgeon will not supplant the surgeon in the sphere of the decision making required to establish a diagnosis and plan therapy, but may assist in gathering the data necessary to reach the decision and in implementing the therapeutic plan for the patient.

Intelligence, the ability to relate to people, a capacity for calm and reasoned judgment in meeting emergencies, and an orientation towards service are qualities essential for the assistant to the surgeon. He must maintain respect for the person and privacy of the patient.

The tasks performed by the assistant will include transmission and execution of the surgeon's orders, performance of patient care tasks and performance of diagnostic and therapeutic procedures as may be delegated by the surgeon.

The ultimate role of the assistant to the surgeon cannot be rigidly defined because of the variations in practice requirements due to geographic, economic and sociologic factors. The high degree of responsibility an assistant to the surgeon may assume requires that at the conclusion of his formal education he will possess the knowledge, skills and abilities necessary to provide those services appropriate to the surgical setting.

The surgeon's assistant may become highly trained and specialized in the areas in which his immediate supervisor has interest, i.e., thoracic or head and neck surgery, or he may remain in an area of surgery requiring a wide variety of procedures such as performed by general surgeons in a community hospital. The frequency of performance of certain duties will in part determine the degree of special expertise such an individual obtains in the care of patients. Since no one individual could participate in all the categories of work outlined, it is expected that a certain degree of limitation will occur.

Essential Requirements

I. Educational programs should be established in medical schools in relationship to a department of surgery, or in other surgical facilities acceptable to the American Medical Association and the American College of Surgeons, in order to provide optimal conditions for the clinical training of the surgeon's assistant.

II. Clinical Affiliations

A. The clinical phase of the educational program must be conducted in a clinical setting and under competent clinical direction.

B. In programs where the academic instruction and clinical teaching are not provided in the same institution, accreditation shall be given to the

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Report of the Council on Medical Education, 1974
Adopted by the AMA House of Delegates, 1974

institution responsible for the academic preparation (student selection, curriculum, academic credit, etc.) and the educational administrators will be responsible for assuring that the activities assigned to students in the clinical setting are, in fact, educational.

C. In the clinical teaching environment, an appropriate ratio of students to physicians shall be maintained.

III. Facilities

A. General—Adequate classrooms, laboratories, and administrative offices should be provided.

B. Laboratory—Appropriate modern equipment and supplies for directed experience should be available in sufficient quantities for student participation.

C. Library—A library should be readily accessible and should contain an adequate supply of up-to-date and scientific books, periodicals, and other reference materials related to the curriculum.

IV. Finances

A. Financial resources for continued operation of the educational program shall be assured through regular budgets.

B. The institution shall not charge excessive student fees.

C. Advertising must be appropriate to an educational institution.

D. The program shall not substitute students for paid personnel to conduct the work of the clinical facility.

V. Faculty

A. Program Director

1. Qualifications—The director must be a licensed physician. Medical teaching experience is a desirable prerequisite.
2. Responsibilities—The director of the program should provide competent medical direction for all academic and clinical instruction and should further be responsible for the over-all effectiveness of the entire surgeon's assistant program.

B. Change of Director

If the director is changed, immediate notification should be sent to the AMA Department of Allied Medical Professions and Services. The curriculum vitae of the new director, giving details of his education, training, and experience in the field, must be submitted, and, if the new director's credentials are in order, accreditation of the program will be continued.

C. Instructional Staff

The faculty should be qualified, through academic preparation and experience, to teach the subjects assigned. A planned program for their continuing education should be provided.

D. Advisory Committee

An advisory committee should be appointed to assist the director in continuing program development and evaluation, in faculty coordination, and in coordinating effective clinical relationships.

VI. Students

A. Requirements for Selection

1. Selection of students should be made by an admissions committee in cooperation with those responsible for the educational program. Admissions data should be maintained on file.
2. Selection procedures should include an analysis of previous performance and experience and may seek to accommodate candidates with a health related background and give due credit for the knowledge, skills and abilities they possess.
3. Candidates for admission must have completed two years of college or the equivalent. Courses in biology, physics, chemistry, algebra, and geometry are recommended. Education at the vocational or nursing level is helpful.

B. Health—Applicants shall be required to submit evidence of good health and successful vaccination. A student health service should be available for evaluation and maintenance of the student's health.

C. Number—The number of students enrolled in each class should be commensurate with the most effective learning and teaching practices and should also be consistent with acceptable student-teacher ratios.

D. Counseling—A student guidance and placement service should be available.

VII. Records

Satisfactory records should be kept on all work accomplished by the student in the training program. An annual report should be prepared on the general operation of the program.

A. General Student Information

1. Transcripts of high school and any college credits and other credentials must be available.

2. A report of the medical examination given upon admission should be retained. Records of subsequent illnesses and medical examinations, including chest x-rays, should also be kept on file, or readily accessible.

B. Academic Training—A record of the class and laboratory participation and accomplishment of each student during academic training should be maintained in accordance with the requirements of the institution.

C. Clinical Work

1. An effective method of evaluating individual student performance during clinical work sessions shall be utilized, and complete records of these evaluations shall be maintained.
2. Copies of practical and written examinations sould be maintained and continually evaluated.

D. Curriculum

1. A copy of the complete curriculum should be kept on file.
2. Copies of class schedules, course outlines, and teaching plans should be kept on file and available for review.

VIII. Curriculum

A. The length of the educational program for the surgeon's assistant may vary from program to program; however, the suggested program involves one academic year each of pre-clinical and clinical work. The length of time an individual spends in the training program may vary on the basis of the student's background and in consideration of the previous education, experience, knowledge, skills and his ability to perform the tasks, functions and duties implied in "Description of the Occupation."

B. Instruction should follow a planned outline which includes:

1. Assignment of appropriate instructional materials;
2. Classroom presentation, discussions, and demonstrations;
3. Supervised practice sessions;
4. Examinations, tests and quizzes—both oral and written—for both didactic and clinical aspects of the program.

C. Curriculum Content—an example of a suggested curriculum is as follows:

1. Preclinical Curriculum

Gross Anatomy. An advanced study of the human body by means of dissection, lectures, demonstrations and prosections. Lecture and Lab.

Medical Terminology. Lecture.

Medical Physiology. A study of human physiology, including the cell and general physiology; blood and immunity, heart and circulation, the body fluids and kidney, respiration, gastrointestinal and metabolic systems, endocrinology and reproduction, and the central nervous system. Lecture.

Introduction to Medicine. A study of the pathophysiology, clinical manifestations, and therapeutic management of disorders affecting the respiratory tract, heart, blood and blood forming organs, endocrine system, genitourinary tract, nervous system, bones, joints and connective tissue, the common infectious diseases, and allergies.

Pharmacology. A study of the use and effects of drugs which act on the various body systems.

Anatomy of the Nervous System.

Fundamentals of General Surgery. A study of the pathophysiology, clinical manifestations, and therapeutic management of surgically related disorders of the peritoneum, alimentary tract, biliary tract, liver, pancreas, spleen, head and neck, endocrine glands, breast, blood vessels, chest and lung, heart and great vessels; basic considerations in benign and malignant tumors; acute conditions in infants and children; fractures; head injuries.

Medical History and Physical Examination. A study of the information to be obtained in the medical history and the technique of the physical examination, with clinical application.

Sterile Technique and Introduction to the Operating Room. Lecture; Clinical.

Principles of Surgical Patient Care. A study of specific aspects of the care of the surgical patient, including wound healing and care of wounds, systemic response to injury, fluid and electrolyte balance, nutrition in surgery, shock and hemorrhage, surgical infections and their treatment, management of thermal injury, care of the surgical patient in the pre-, intra-, and post-operative period, recognition and management of post-operative complications. Lecture.

Surgical Care Techniques. Instruction in the basic skills needed for care of the surgical patient, including subcutaneous and intramuscular injection, venipuncture, cut-down, gastrointestinal intubation, urethral catheterization, cardiopulmonary resuscitation, knot-tying.

Introduction to Roentgenogram Interpretation. Includes a study of the chest roentgenogram, abdominal roentgenogram for signs of obstruction and penumoperitoneum, roentgenographic evidence of fractures of the long bones.

Electrocardiogram Recording Technique and Interpretation of Arrhythmias.

Pulmonary Function Tests and Inhalation Therapy. A study of oxygen administration, humidity control, breathing exercises, postural drainage, percussion techniques, intermittent positive pressure breathing, management of ventilators, bedside ventilation measurements.

2. Clinical Curriculum

Students are assigned to surgical services, preferably with a two-month rotation, with responsibility for history and physical examination, assisting in surgery and carrying out pre-operative and post-operative care procedures as assigned by, and under the supervision of the surgeon or the resident surgical staff. The student should have a rotation in the emergency department, to gain experience in the care of acutely injured patients.

D. A synopsis of the complete curriculum should be kept on file. This instructional program should include the rotation of assignments, the outline of the instruction supplied, and lists of multimedia instructional aids used to augment the experience of the student.

IX. Administration

A. Catalog—An official publication including a description of the curriculum should be issued. It should include information regarding the organization of the program, a brief description of required courses, entrance requirements, tuition and fees, and information concerning hospitals and facilities used for clinical training.

be carried out through the cooperation of the American Medical Association Council on Medical Education and the American College of Surgeons.

B. Accreditation—The evaluation of an institution or a program of study can be initiated only by the express invitation of the chief administrator of the sponsoring institution or his officially designated representative. The evaluation shall

C. Withdrawal—The institution may withdraw its request for initial accreditation at any time (even after evaluation) prior to final action. The AMA Council on Medical Education and the American College of Surgeons may withdraw accreditation whenever:

1. The educational program is not maintained in accordance with the standards outlined above, or
2. There are no students in the program for two consecutive years.

Accreditation is revoked only after advance notice has been given to the head of the institution that such action is contemplated, and the reasons therefore, sufficient to permit timely response and the use of established procedures for appeal and review.

D. Re-evaluation

1. Review—The head of the institution being evaluated is given the opportunity to become acquainted with the factual part of the report prepared by the American College of Surgeons, and to comment on its accuracy before final action is taken.
2. Appeal—At the request of the head of the institution, a re-survey may be made. Accreditation decisions may be appealed by letter first to the American College of Surgeons and then to the Council on Medical Education of the American Medical Association.

E. Reports—An annual report should be made to the AMA Council on Medical Education. A report form is provided and should be completed, signed by the director, and returned promptly.

F. Re-survey—The AMA and the American College of Surgeons will re-survey all educational programs at appropriate intervals.

X. Application and Inquiries

Accreditation—Application for accreditation of a program should be made to:

Department of Allied Medical Professions
and Services
Division of Medical Education
American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610

Our Connecticut Malpractice "CRISIS"

NUMBER OF INCIDENTS BY SPECIALTY AS OF 3/31/75

Specialty	Number of Incidents 10/31/71 to 4/30/74	10/31/71 to 10/31/74	10/31/74 to 3/31/75
Surgeons—All Classes	11	14	15
Surgeons—General Surgery	18	29	33
Thoracic Surgeons	2	4	5
Urologists	9	11	17
Anesthesiologists	20	30	49
Neurosurgeons	5	9	13
Physicians—No Surgery	54	75	97
Obstetricians and Gynecologists	43	54	70
Orthopedists	16	26	39
Physicians—Minor Surgery	9	13	17
Plastic Surgeons	6	9	10
Otolaryngologists—No Plastic Surgery	5	5	14
Ophthalmologists	5	7	11
Incorporation	2	2	3
Vascular Surgeons	—	1	1
Total	209	293	394

DEFENDANTS' CASES REVIEWED BY DISTRICT CLAIM REVIEW PANELS

Panel No. 1—Fairfield County

1. Cases reviewed	35
2. Vote	
a. Malpractice	4
b. Compromise	9
c. Defend	22
3. Disposition	
a. Tried	7
1) Won	5 (1 on appeal)
2) Lost	2 (on appeal)
b. Trial pending	30

Panel No. 2—New Haven County

1. Cases reviewed	11
2. Vote	
a. Malpractice	1
b. Compromise	3
c. Defend	7
3. Disposition	
a. Settled	1
b. Trial pending	10

Panel No. 3—Hartford, Litchfield, Tolland Counties

1. Cases reviewed	21
2. Vote	
a. Malpractice	2
b. Compromise	11
c. Defend	8
3. Disposition	
a. Settled	6
b. Withdrawn	1
c. Trial pending	14

Panel No. 4—Middlesex, New London, Windham Counties

1. Cases reviewed	5
2. Vote	
a. Malpractice	0
b. Compromise	1
c. Defend	4
3. Disposition	
a. Settled	1
b. Trial pending	4

BREAKDOWN BY THE FOUR CLAIMS REVIEW DISTRICTS

	10/31/74	3/31/75
District No. 1—Fairfield County	93	132
District No. 2—New Haven County	82	97
District No. 3—Hartford, Litchfield, Tolland Counties	97	138
District No. 4—Middlesex, New London, Windham Counties	20	27
	292	394

From the Report of Committee on Professional Liability, M. David Deren, M.D., Chairman.

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Report of the Ad Hoc Committee on Medical Microbiology Laboratory Utilization

State of Connecticut, Department of Health

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Hartford

This paper was prepared jointly by the Committee on Medical Microbiology Laboratory Utilization.

William F. Vincent, Ph.D., Assistant Director of the Laboratory Division, Connecticut State Department of Health, with the support and approval of Douglas Lloyd, M.D., Commissioner of Health, requested the formation of a committee of experts within the State of Connecticut in the diagnosis and treatment of infectious disease:

1. to review clinically irrelevant, potentially misleading and unnecessary work performed at needless cost in clinical microbiology laboratories;
2. to review objective standards that could be introduced in any Connecticut microbiology laboratory to control this problem;
3. to consider means of educating the physicians and clinical laboratory workers of the state in the need for implementation of such practices;
4. to review diagnostic procedures which need *not* be available in every clinical laboratory and to make recommendations for centralization of such procedures in selected major laboratories in the state.

Emphasis was placed on developing recommendations that would be useful to *independent and community hospital laboratories* serving physicians with patient care problems typical for these institutions. *It was recognized that those laboratories associated with institutions caring primarily for patients with compromised host defenses might develop different standards. It was agreed that academic centers would support the production of information which in community care centers not engaged in research or graduate education might display an insufficient benefit to patient care to justify the cost.* It would be essential for the members of this committee to preserve this perspective because its representation would be primarily from educational and public health centers.

It was recognized that deficiencies exist in some laboratories which require effort and allocation of resources which may increase costs. There was concern that the recommendations of this committee not interfere with such laboratory improvement nor that the recommendations would be misinterpreted or abused by those who would not support allocation of adequate resources for application of minimum standards to the performance of clinical microbiology.

The need for bringing to the attention of laboratories many improvements in laboratory practice, not currently uniformly applied, which would benefit patient care was recognized. It was felt that an attempt to include such recommendations would exceed the scope of the specific charge which had been presented to the committee.

It was anticipated that the committee would establish recommendations which would be disseminated to clinical laboratory workers and be brought to the attention of physicians who use these laboratories to engender support for the introduction of controls. It was further anticipated that the recommendations would be helpful in orienting performance evaluation and proficiency testing toward the need for control of work performed on specimens which might otherwise produce information of less clinical value. Support for this was found in the Public Health Code of the State of Conn. 19-13-D32(a) which states:

"No specimen shall be examined if unsuitable for testing because of improper collection, improper preservation, apparent spoilage, excessive time lapse between collection and examination when applicable, or other reasons sufficient to render the findings of doubtful validity."

Recommendations of the Committee

A. Institutional Policy for Introduction of Controls.

Discussion of proposed implementation of controls on utilization should be carried out with the medical staff of the institution. This might take place through the Executive Committee or a special committee appointed to review this problem. Although the recommendations of this committee might be helpful in convincing physicians of the usefulness of introducing such controls, it was recognized that they would have to be supplemented by other measures which would include invitation of guest speakers experienced in the laboratory diagnosis and treatment of infectious disease who could support the committee's recommendations. It was hoped that publication of the proceedings of the committee would contribute to recognition and acceptance of the need for controls. Policies accepted by the staff should be circulated annually to the house staff and medical staff and be available on all nursing units. They should be reviewed and revised annually. The medical staffs must be assured that specimens and cultures will be properly stored for several days and both written and telephone requests will be issued on the same day when repeat collection of specimens is recommended or when abbreviated bacteriologic workup is conducted. This would provide the physician with the opportunity to consult with laboratory personnel regarding further evaluation.

B. Delay in Transmission.

The time of collection may be stated on all specimens but is essential for urine specimens, sputa, genital tract specimens and wound exudates. These specimens should be received in the laboratory within 2 hours. If a greater delay is unavoidable, the specimen should be refrigerated but this may not preserve the viability of anaerobes, Neisseria and other fastidious organisms. Those received after this interval without evidence of refrigeration should be stored and request for a repeat collection should be issued.

C. Duplication.

1. When more than one specimen per day (with the exception of blood and cerebrospinal fluid) is submitted from the *same* body site by the *same* method of collection the first one which is received or the one of apparent best quality should be processed and a consultation requested to justify processing of others which may be stored at 4°C.

2. A maximum of four blood cultures per day may be collected.[1] No significant increase in the likelihood of obtaining a positive blood culture has been shown to occur in patients with endocarditis and bacteremia of other types if additional cultures are collected. Any number of blood cultures may fail to reveal the agent during antimicrobial therapy. If at all possible, therapy should be discontinued for at least 48 hours prior to the collection of cultures. If this is not possible, the physician should review with laboratory personnel the appropriateness of collecting additional numbers of specimens. There are no data to support the usefulness of collection of blood cultures at less than hourly intervals. In acute sepsis in which therapy must be instituted immediately, blood cultures may be collected, two from each arm, to reduce the confusion that may result from the contamination of one venipuncture, following which therapy may be immediately started.

3. Multiple specimens are often received for isolation of mycobacteria from sputum. After having received specimens collected early in the morning on three consecutive days, the physician should be requested to consult regarding processing others. The same should be applied to more than three consecutive specimens for isolation of enteric pathogens and parasites from stools.

D. Throat Cultures

Only beta-hemolytic streptococci should be sought in routine throat cultures. Appropriate techniques should be used to assure isolation and grouping of these organisms. Colonizing *Hemophilus influenzae* and *Streptococcus pneumoniae* are commonly isolated from children.[2] High colonization rates of *Staphylococcus aureus* and enteric gram negative rods including *Pseudomonas aeruginosa* are reported in hospitalized patients.[3] Localized infection by these agents in the throat is not established. Physicians should not construe, therefore, that the isolation of these agents constitutes proof of local pathogenicity. For these reasons it is doubtful that the isolation and reporting of agents other than beta-hemolytic streptococci from throat cultures is of clinical value with the following exception:

If conditions other than streptococcal pharyngitis such as peritonsillar abscess, epiglottitis or infection by *Neisseria gonorrhoeae*, *Corynebacterium diphtheriae*, *Candida* or Vincent's organisms is suspected, they should be specifically noted on the request slip so that appropriate procedures can be performed for isolation and identification.

E. Urine Specimens

All clinical facilities should establish standards for proper collection of urine specimens. Their consistent application is essential to assure a minimum number of contaminating organisms. The generation time of enteric bacteria varies from 15 - 20 minutes. Growth in the urine will depend upon the presence of glucose protein and an appropriate pH and temperature. Many contaminated uring specimens contain between 10 and 1000 organisms/ml. The larger the number of contaminating organisms which are introduced at the time of collection, the greater will be the likelihood of obtaining a spuriously large number by the time the specimen is cultured in the laboratory.

Inoculation of plates with a 0.001 ml calibrated loop is more efficient that pipetting of diluted urine into pour plates.[4] Data published by Kass suggest that speciation and antimicrobial susceptibility testing, if indicated, should be performed on clean catch specimens when ten or more colonies (10^4 bacteria/ml or more) are found in either clean catch or catheterized specimens.[5] When less than ten colonies are observed in specimens (counts between 10^3 and 10^4/ml,) isolates may be reported on the basis of gross colonial morphology without speciation and antimicrobial susceptibility testing. Plates may be held at 4°C and a repeat collection or consultation should be requested regarding further workup. If comparable or greater numbers of the same isolate are found in the second specimen, a complete bacteriologic workup should be conducted. Clean catch specimens with counts between 10^4 and 10^5 may be handled in the same way if it is known that the patient is not being treated with antimicrobials. In untreated patients the probability that such a count represents infection is only 5%.[5] The probability is higher for treated patients.

More than one isolate in clean catch specimens with counts between 10^4 and 10^5/ml, or more than two isolates exceeding 10^5/ml, usually signify contamination.[4] Isolates may be reported on the basis of gross colonial morphology. It should be suggested that the results represent contamination and repeat collection should be requested. When mixed cultures are obtained from specimens collected from closed drainage systems the physician should be contacted to determine whether complete speciation and antibiograms of isolates will be clinically useful.[4]

Anaerobic cultures should not be performed on clean catch urine specimens. The urethral glands are colonized with anaerobic organisms derived from intestinal flora. These are inevitably introduced into urine specimens whether or not they are collected by catheterization. Anaerobic infection of the urinary tract is extremely uncommon.[6] In suspected instances, specimens must be collected by suprapubic needle aspiration.

Cultures of Foley catheter tips invariably produce a multiplicity of isolates when simultaneously collected urine specimens are sterile or demonstrate a single isolate.

The method used for specimens collected by suprapubic aspiration should detect any number of bacteria which may be present. This is accomplished by using in addition to the usual 10^{-3} ml calibrated loop a 10^{-2} ml calibrated loop for plate inoculation to detect numbers in the 10^{2-3}/ml range, and by inoculating 1 ml into broth for detection of numbers in the 1-100/ml range.

F. Lower Respiratory Tract Secretions.

As many as one fifth of all expectorated sputum specimens may demonstrate squamous cells and an absence of neutrophils indicating that the material is primarily oropharyngeal in nature.[7] Numerous authors have emphasized the futility of diagnosing and treating pulmonary infections on the basis of cultures which are contaminated with oropharyngeal flora.[8] [9] [10] [11] [12] [13] Alternative methods of collection have been recommended.[14] [15] Although it is worthwhile emphasizing the value of naso-tracheal aspiration, tracheal puncture and lung aspiration, continued dependency upon expectorated sputum can be anticipated. Gram stains are requested by physicians only about 10% of the time. Although Gram stains are not regularly useful in determining the etiologic agent[13], they should always be performed to assess the quality of the specimen. When only squamous cells and no neutrophils are seen, the specimen should be stored at 4°C and a written and verbal report rendered indicating the nature of the specimen and a request for a repeat collection. If neutrophils are found or if there is an absence of squamous cells, cultures should be planted. Preparation of the Gram stain prior to the cultures is easily accomplished by the use of cotton swabs which are smeared onto flamed clean slides. While awaiting the interpretation of the Gram stain, the applicator swabs are reinserted into the original transport container.

G. Wound Specimens

The presence of nutrients such as serum, blood and exudate in specimens collected from wounds contributes to the growth of bacteria during the period of transit. The production of toxic metabolites by some bacteria may prevent growth or kill fastidious organisms which may also be present in the specimen. It is widely accepted that strict anaerobes are killed by exposure to atmospheric conditions in a matter of minutes.

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Aspiration with syringe and use of gassed-out tubes are preferred for optimal collection. However, it is often clinical practice to collect exudate from wounds on swabs; these should be immediately immersed in a non-nutrient transport medium which contains reducing substances. Acceptable media include Amies' and Stuart's. These will also prevent drying of the specimen. Direct smears can be made following transport.

Routine direct anaerobic cultures are not practical for all specimens submitted from wounds. Physicians should be urged to request anaerobic culture when material is obtained from any deep site of infection which is not likely to be contaminated with cutaneous, oropharyngeal, or intestinal bacterial flora. Laboratory workers should process direct anaerobic cultures when the description of the material stated on the requisition slip suggests that the material is derived from deep and uncontaminated sites of infection. Regardless of the policy, direct anaerobic cultures should, as a rule, not be performed when Gram stained direct smears demonstrate only squamous cells and an absence of neutrophils. A preliminary report should be rendered indicating the superficial nature of the specimen and requesting a consultation regarding the usefulness of anaerobic culture. Conversely, it is desirable to perform direct anaerobic cultures when an abundance of neutrophils is observed without squamous cells. This is facilitated by preparation and examination of Gram stained direct smears before inoculating culture media.

H. Cervical-Vaginal-Intrauterine Material.

Random specimens from this area frequently demonstrate only squamous cells. In this case a search should only be made for *Neisseria gonorrhoeae.* If isolation of *Candida* or *C. vaginale* is specifically requested, these should be sought because they may produce significant infection without a pyogenic reaction.[16] Similarly, if requests for beta hemolytic, group B streptococcus are received, this agent should be sought because it may produce significant neonatal infection without producing a neutrophilic reaction in the maternal vagina.

When leukocytes are present in the specimen, cultures for aerobic bacteria should be conducted. Anaerobic cultures should only be performed when there is an absence of squamous cells and when specimens are specifically labeled as intrauterine material or it is otherwise known that collection has been conducted in a way which will avoid contamination of the specimen with cervical and vaginal epithelium and bacterial flora.[17]

I. Extent of Speciation and Typing of Bacterial Isolates.

When the same *presumptive* species is isolated from the same body site on consecutive days, it is not necessary to conduct complete speciation of the second specimen. If additional cultures continue to demonstrate the same isolate on consecutive days, complete speciation should be conducted only on every other specimen. When yeasts are isolated from superficial skin lesions, sputum or urine specimens in mixed culture, they should be reported as "yeast" without expending effort on classification unless direct smears show pseudohyphae. In this case, or if yeasts are found in pure culture, or if there is a specific request for isolation of fungus or yeasts from these specimens, complete characterization should be performed.

Mixtures of two or more isolates which represent *indigenous* flora of neglible pathogenicity from various body sites may be conventionally grouped as "mixed flora" without enumeration of the genera or species. This can be generally accomplished by inspection of gross colonial morphology with the aid of a few rapid tests such as optochin or spot bile solubility, slide coagulase, oxidase and catalase. Isolates may be grouped in the following mixed flora categories depending upon the source of the specimen.

1. "Mixed cervical-vaginal flora" (from cervical and vaginal specimens)
    - *Corynebacterium sp.* other than *C. vaginale*
    - *Staphylococcus epidermidis*
    - *Streptococcus sp.* not Group A or B
    - *Lactobacillus sp.*
    - Enterobacteriaceae (except post-operative specimens)
2. "Mixed intestinal flora" (from bowel, colostomy, ileostomy, rectal abscess)
    - Enterobacteriaceae (excluding *Salmonella sp., Shigella sp., Yersinia sp.* and *Edwardsiella)*
    - *Pseudomonas sp.* unless predominating
    - *Streptococcus sp.* except hemolytic ones
    - *Clostridium sp.*
    - *Bacteroides sp.*
    - *Staphylococcus epidermidis*
3. "Mixed cutaneous flora" (from superficial skin lesions)
    - *Corynebacterium sp.* (except *C. diphtheriae)*
    - *Bacillus sp.*
    - *Staphylococcus epidermidis*
    - *Streptococcus sp.* not beta hemolytic or group D
4. "Mixed oropharyngeal flora" (from respiratory tract secretions, mouth and external ear lesions)
    - *Staphylococcus epidermidis*
    - *Streptococcus sp.* except beta-hemolytic streptococci and *S. pneumoniae*
    - *Corynebacterium sp.* (except *C. diphtheriae)*
    - *Neisseria sp.* (excluding *N. meningitidis* and *N. gonorrhoeae)*

Bacteria which are not readily identified are often isolated from mixed cultures from superficial body sites. Often these are unrelated to infection and do not justify complete speciation and antimicrobial susceptibility testing. Unnecessary work may be avoided by holding the cultures and reporting the isolates as "atypical Gram negative rod, etc." with a request for a repeat culture or consultation regarding further micro-biologic workup.

J. Antimicrobial Susceptibility Testing.

Criteria establishing which isolates will be subject to antimicrobial susceptibility testing should be established within the laboratory and not because of a request by the physician. Bacteria must be isolated in pure culture for testing. Indigenous flora should not be tested. *Streptococcus pneumoniae* and *Streptococcus pyogenes* should be tested only in exceptional cases (eg. penicillin hypersensitivity) when specifically requested by the physician, because of predictable susceptibility to penicillin. Testing of *Neisseria* should be referred to laboratories equipped to perform special types of antimicrobial susceptibility tests. The unmodified Bauer-Kirby method is not satisfactory for this purpose. Direct testing of urine produces a significant percentage of erroneous results.[18] There is no clinical justification for the direct susceptibility testing of spinal fluid except in infants from whom enteric bacteria are frequently isolated. Although occasional isolates of *Hemophilus influenzae* are being reported resistant to ampicillin, the test requires careful standardization and must be performed after the agent is isolated.[19] Direct testing of blood cultures is sometimes helpful but should always be confirmed by the standardized method. *Staphylococcus epidermidis* should be tested for susceptibility only when it is isolated in pure culture. Results of testing of susceptibility to sulfonamides, trimethoprim-sulfamethoxazole, nalidixic acid and nitrofurantoin should be routinely reported only on urinary tract isolates.

K. Smears of Spinal Fluid for Mycobacteria

Smears of spinal fluid should not be examined for mycobacteria unless the protein is abnormally elevated and there are at least 100 white cells. A smear must be prepared by building up multiple layers of sediment obtained by centrifugation of fluid at 2000 RCF for 15 minutes. The sediment is applied with an inoculating loop to a glass slide.[20] An adequate drying time must be provided between each application. This procedure is time consuming and is not practical to perform during evening or at night. Later, if a fibrin clot or web forms, it may be removed for stain and culture.

L. Infection Control

Many laboratories are overburdened with the collection and culture of environmental sampling of floors and surfaces or air.[21] Intermittent sampling of respiratory therapy apparatus is useful if standard methods are used and the results are effective for improving methods of cleaning and sterilization. Intermittent sampling should also be conducted of autoclaves and of items which must be sterile but which cannot be steam or gas sterilized and are therefore treated with cold sterilizing agents. Routine sampling of presterilized fluids, medications, materials including plastics and suture material is not desirable. The Connecticut State Department of Health has recently revised its recommendations that commercially prepared infant formula milk be routinely sampled unless this material is purchased in bulk containers which are dispensed into individual units at the time of use. In this case random sampling is required to identify any contamination which may occur in the transfer procedure. Disinfectants and antiseptics require sophisticated methods of evaluation which should not be attempted in hospital laboratories.

Infection control committees should employ sampling of personnel, equipment or environment only selectively when the information will be of specific epidemiologic value. Such sampling must be performed by standard methods which produce results which can be interpreted. The committee should explore beforehand whether the sampling data will significantly influence their recommended course of action, and whether there is a reasonable likelihood that such recommendations will influence existing practices. If they will not, then sampling should not be conducted. Sampling of hands, gloves, masks and clothing is sometimes useful to demonstrate to students the presence of bacterial contamination. Although the results of such sampling cannot be correlated with risk which such contamination represents as a source of infection, the impact is often of sufficient value to be employed for its educational merits alone.

M. Duplication of Services

A compilation of the availability within the State of infrequently performed tests should be conducted. This information should be disseminated to clinical laboratories to prevent unnecessary duplication of services.

N. Further Evaluation

Members felt that clinicians would be uncomfortable about accepting empirical recommendations for controls on the extent of specimen processing to effect a saving in clinical laboratories when the benefit for patient care had not been objectively established. Additional support of the recommendations of this committee will depend on development of such data and further discussion between clinicians, pathologists, microbiologists and technologists. *It is recommended that another committee be reappointed within two years to reassess these recommendations.* There should be equal representation between laboratory workers and clinicians actively engaged in the diagnosis and treatment of infectious disease.

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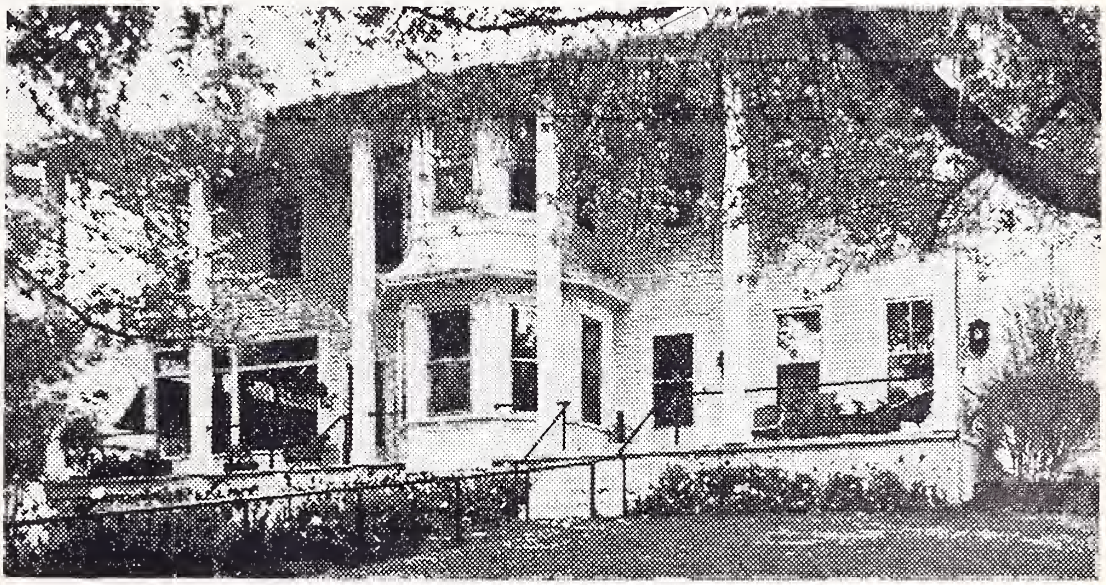

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Should Small Rural Community Maternity Departments Be Closed?

Urabagilu Nagaraja, M.D.

ABSTRACT—Articles have been written recently to justify the closure of small rural maternity units. Positive social reasons for maintaining obstetrical Departments in small rural community hospitals include the personalized services by familiar personnel and secondly the elimination of the anxiety of a frantic trip, once labor has started, to a strange hospital in a large city. Studies have proven that with the use of obstetrical facilities for combined obstetrical, clean gynecological and general female surgery there is no resultant increase in maternal/neonatal infection. With intensive management of the high risk pregnancy and/or neonate, and early recognition and referral of unusual cases small rural community maternity departments can continue to function with optimum quality of care and possible economic savings if all factors are taken into account.

In recent years due to a decline in the birth rate many maternity units have closed for consolidation of services with another hospital.[1] This may be accepted in urban areas or in communities where there is more than one hospital. In remote areas or in a small community it can pose difficult problems.

Obstetrics is a vital part of family medicine. The factors which influence the practice of obstetrics are of importance to the entire medical community. The family, being the basic communal unit, is the focus of much emotional stress on occasion of ill health, involving hospitalization. Small community hospitals have a special way of providing care to society by furnishing more personalized services for the family unit.

The full service hospital fulfills most of the medical needs of a single family unit. Through the community physicians it delivers the infant, X-rays and sets the broken bones, sutures the numberless lacerations, administers the emergency care, and treats illnesses of the growing child and young adult. Its surgeons remove malfunctioning or diseased organs. Its medical men treat diseased and/or worn out parts and when unavoidable utilize all the means at their command to make death as painless as possible—all this within the home community by familiar hands, and close to the family and friends.

Contrast this to the emotional impact on the family having to travel miles to an unfamiliar and undoubtably larger hospital where the only familiar face is the physician who delivers the child.

Today young parents are besieged on all sides and by news media regarding prenatal care and childbirth. We are no longer dealing with the patient who is led blindly through pregnancy and delivery by her wise and all-knowing General Medical Practitioner. The liberated young woman is urged to be her own Gynecologist and at the least expects to be informed of all aspects of her physiology and reproductive process. She reads of the joy of the young couple who deliver their own child at home—at times under the watchful eye of the obstetrician, at other times not. She turns on her television to watch a film documenting the merits of the return to midwifery. Her friends expound on the fulfillment of having their husbands with them at the birth of their child. "Natural childbirth is very much in vogue at present." Whatever, the reasoning behind this trend, it exists and the obstetrician must either adapt to it or offer some acceptable substitute. The smaller hospital has certain advantages in this respect. The atmosphere need not be as impersonal as the larger factory type institution. It can offer an active supportive role in labor and delivery including the father. Rooming-in allows the family to be a unit within the hospital without a loss of quality care.

The family unit within the community must be heard, its needs felt, and if possible, its desires fulfilled. In one such community in Northwestern Connecticut, growing in population, but decreasing in birth rate, the decreased use of the maternity section of its hospital was felt by some elements in the state government and within the hospital itself to be an unnecessary economic drain on the hospital and hence on the public. An announcement of the possible closure was made and the furor that ensued was unprecedented. The Obstetrical Department of this hospital at that time was staffed primarily by three (3) Obstetricians, all certified by the American Board of Obstetrics and Gynecology. The Pediatric section of the staff consisted of two (2) Pediatricians. At a "standing room only" hearing by a state health department agency, parents, parents-to-be and other concerned community residents arrived en masse, bringing their state and

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local legislators with them, to demand the maintenance of services. Their outcry was so impressive that two years later the maternity unit remains open.

Apart from the emotional aspect one must weigh the problems involved in transporting the uncomplicated multipara a long distance. Also there is the availability of emergency type transport.

In Litchfield County, Connecticut, with heavy snow fall during winter months, road conditions are certainly contributive to transporting patients to a hospital at a considerable distance. Snow and ice during the winter months can endanger the car and the pregnant woman. During severe snowstorms road conditions are so bad that many accidents and deaths occur. In one such storm in a Northwestern Connecticut hospital, patients and employees had to be transported to the hospital by snowmobiles.

The danger inherent in the loss to a community of its obstetrical unit is not confined to this specialized area. When the obstetrical unit is closed, the obstetricians leave. They are followed by the pediatricians. Without a pediatric service, care for the newborn and childhood problems must be sought out of town. The departure of obstetricians and pediatricians to another area is followed by the orientation of the family to a new hospital. This results in a decrease in the use of the medical and surgical services in the local hospital. Admissions decline throughout the entire institution.

In addition to the possible threat to the viability of the institution is the very real threat imposed on the emergency obstetrical patient who must be treated in the Emergency Room of a community hospital stripped of its obstetricians. It is not practical or feasible to establish emergency obstetrics service without obstetricians.

In 1970 the Connecticut Hospital Planning Commission's Study concluded that even though it is advisable to consolidate for economic reasons, the community must be consulted concerning its desire for and ability to support a maternity unit.[2]

In the future the small community birth rate may increase. It depends partially on the geographic area. More and more young couples of reproductive age are moving to suburban areas and because of the current economic recession some are postponing having children. As Connecticut's live birth count continues to decline, the number of *small* maternity services keeps increasing.[3] At the other end of the scale, the number of hospitals with large maternity services dwindles.

Small communities feel a real conflict between the economic benefit of closing obstetrical units and the failure to provide obstetrical specialties for the local patients.

There are two main problems:

1) Economic vs. infection

2) Quality of obstetrical care

a) Economic problem

The economic problem is basically one of bed utilization. This can be solved by using beds not needed for obstetrical patients for other purposes such as termination of pregnancies, laparoscopies and other gynecological surgical patients as well as clean female general surgical patients.

The physical setup of the hospital unit may have to be altered somewhat to facilitate use and efficiency of nursing care. If we add gynecology and general surgery, then we are no longer dealing with the usual trinity of labor/delivery, postpartum care and nursery. It may be necessary to increase the nursing staff, but this should cause no undue hardship to the hospital as the patients would be channeled from what would previously have been female surgical units, relieving some of the patient load from those nurses. Nursing practitioners assigned to the now Obstetrical/Gynecological/ Surgical Unit would be trained in emergency care as well as routine nursing and be able to identify early warning signals of impending maternal or neonatal distress.

As per the Public Health Code of the State of Connecticut and other Departmental Regulations, February 1974, Sec. 19-13-D14a Admission of Non-Infected Gynecological Patients to the Maternity Section of General Hospitals:

> "Exceptions to the requirements of a separate unit in section 19-13-D14 (d) (2) of the regulations of Connecticut state agencies shall be made only for a hospital approved by the public health council or the commissioner of health to allow for more efficient utilization of hospital beds by permitting the admission of noninfected gynecological patients to maternity units without jeopardizing the health and care of any patient on such a unit. Such a unit shall be designated "The Combined Unit."

The regulations for participating hospitals shall include organizational requirements, criteria for admission, regulations for operation and regulations for control as set forth by the medical staff.[4] The new regulations are being proposed by the 1975 session of the Connecticut legislature which may widen the indications for admission to such a unit.

In 1971 in response to a resolution introduced by the Connecticut delegation the AMA House of Delegates appointed a committee to study the policy re utilization of obstetrical service beds. The Board's committee contacted many experts in the field of microbiology as well as those organizations having an interest in the subject, including the American College of Obstetricians and Gynecologists, the Joint Commission on Accreditation of Hospitals and the Center for Disease Control of the United States Public Health Service in Atlanta, Georgia. They concluded that good medical practice would permit the use of maternity units for clean gynecological and surgical cases and that the admission and care of such patients should be afforded to members of the medical staff with appropriate qualifications. These admissions should be under close surveillance by the hospital's infection control committee. Implementation of such changes should be at the state or local level and by regulation rather than by legislation. Experience has shown no increase in incidents of infection in the maternity units of the above type.[5]

Diddle,[6] in the city of Knoxville, Tennessee, studied the relationship of morbidity to integration of Obstetrics and Gynecologic patients. He conducted a 6-1/2 year survey in the University Hospital between August 1, 1964 and January 1, 1971. During that period obstetric and selected gynecologic in-patients were integrated in the same wing of the hospital. The same nursing personnel provided care for all the patients. Isolation techniques were used in the care of those febrile or with infections. There were no maternal or fetal mortalities or post-operative or postpartum complications that could be attributed to mixing of the patients. He pointed out that the high unit cost in obstetric and gynecological services is due to a fixed high personnel cost in the face of a fluctuating census and empty obstetric beds. A "swing bed" unit can be heard from either the obstetric desk or the adjacent gynecological ward desk. Only selected "clean, short-stay" gynecological patients can be admitted to the obstetric ward when the obstetric census is down. He found that a combined gynecological and an obstetric service is a mutually safe post-operative environment. Other studies that are being undertaken also show no increase in infection.

As Fabro[7] said "If there are no dangers of infection, maternity units should be open to clean female patients taken care of by all types of physicians, subject, as always, to reasonable and scientifically verifiable rules."

Lowering the indirect cost to the consumer may require some juggling of facilities and staff, but the patient is already reaping a direct financial saving through the use of a smaller institution where costs are lower than in the larger facilities. In these days of spiraling costs and inflation this should be a definite consideration in choosing a local rural obstetrical unit.

b) Quality of Obstetrical Care

In addition to solving the economic problem we must consider the question of the quality of care in terms of morbidity and mortality. (Maternal and perinatal)

What criteria determine the ability of an institution to supply high quality obstetrical care? Can it possibly be the number of patients contained in a specified unit? Is it not the ability of the staff to handle the needs, medical and emotional, of patients and provide support to the family unit as well? The morbidity and mortality rate for mothers and infants is just as good in rural northwestern Connecticut when such patients are handled by trained obstetricians and pediatricians. One study, consisting of 955 perinatal deaths, related mortality and morbidity with the type of care given, not on the number of deliveries in an institution.[8] In this study one municipal hospital carried a higher perinatal mortality rate than those hospitals with similar clientele, but more highly trained staff. The Connecticut State Department of Health conducted a study of perinatal death rates by hospital size groups from the four year period 1969 - 1971:[9]

Hospital Size Group	*Avg. Number of Births per Year: 1969-1972*	*Total Births**	*Perinatal Deaths***	*Perinatal Death Rate****
A	Over 2,000	69,726	1,740	25.0
B	1,000 - 1,999	82,852	1,913	23.1
C	500 - 999	25,993	575	22.1
D	Under 500	5,473	101	18.5
Total of above		184,044	4,329	23.5

*Total Births = Live births *plus* stillbirths of 20 or more weeks gestation.

**Perinatal Deaths = Stillbirths of 20 or more weeks gestation *plus* deaths in the first 28 days of life (neonatal deaths).

***Perinatal Death Rate = Perinatal deaths per 1,000 total births.

The following is the obstetrical deaths by hospital size group in Connecticut state for the four year period 1969-1972:[10]

Hospital Size Group	*Avg. Number of Live Births per Year: 1969-1972*	*Live Births*	*OB Deaths*	*Rate**
A	Over 2,000	68,943	8	1.16
B	1,000 - 1,999	81,985	14	1.71
C & D	Under 1,000	31,144	5	1.61
Total of above		182,072	27	1.48

*Rate = Number of obstetrical deaths per 10,000 live births.

The above data support that small community maternity units can do as good as, or better than, larger units in terms of perinatal mortality and maternal mortality.

In addition to above data, the outcome also depends on inherent characteristics of the population served in a community such as age, race socio-economic conditions.

While it is true that 80-90% of obstetrical patients deliver without complications, our aim must always be to keep maternal and perinatal morbidity and mortality to a minimum. The small percentage of "high risk" obstetrical patients need varying degrees of care. They can be divided into two groups according to the severity of risks and to the capabilities of the local obstetrician. The first group are those unusual cases who need more specialized treatment. These should be referred to larger community hospitals or to university centers. They include severe degree of the Rh sensitization where intrauterine transfusion is needed, any major endocrinopathies, or genetic disorders. The remaining high risk pregnancies such as diabetes, cardiacs, Rh sensitized, essential hypertension, chronic renal disease, unexplained stillbirth, habitual abortion, hydramnios, multiple birth, intrauterine growth retardation, persistent antepartum bleeding, anemia, toxemia, post-maturity, prematurity and premature rupture of membranes can be treated by the local obstetrician if qualified consultation is available and used.

With standard nursery equipment the local pediatrician should be able to cope with many neonatal problems. However, the neonate should be transferred to a newborn intensive care unit immediately if he shows signs of respiratory distress syndrome, severe congenital abnormalities, or prematurity of less than three and one-half to four pounds. This practice had long been in effect in larger metropolitan areas with excellent results. The newborn center generally has its own transport unit with a portable incubator which collects the newborn on an emergency basis.

Admittedly, the larger medical center is more suitable for a very small number of obstetrical patients, but for the majority of pregnant women and their newborn infants the small hospital continues to fill a definite need. With earlier recognition and adequate management of the high risk pregnancy, and early referral of severe problems, community maternity departments can continue to function without jeopardizing the quality of care and can create economic gain in the hospital bed use.

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The Heart Associations of Greater New Haven and Bridgeport are sponsoring a symposium entitled "Advances in Clinical Cardiology" on Saturday, September 20, 1975 at Valle's of West Haven. This symposium is open to all physicians in Connecticut. Four topics will be presented: *Overview of the Advances in Clinical Cardiology* by Lawrence S. Cohen, M.D. Chief of Cardiology, Yale-New Haven Medical Center; *Lessons Learned in the Coronary Care Unit by Hemodynamic Monitoring* by J. O'Neal Humphries, M.D., Associate Professor of Medicine, The Johns Hopkins Hospital; *Use of Echocardiography: 1975* by Michael Johnson, M.D., Associate in Radiology and Fellow in Cardiology, Duke University Medical Center and *Advances of Bundle of His-Electrography* by David S. Cannom, M.D., Assistant Professor of Medicine and Director of Fitkin Coronary Care Unit, Yale-New Haven Medical Center. The Connecticut Academy of Family Physicians has approved the program for 6 elective hours of credit. For further information contact either the Heart Association of Greater New Haven, 1184 Chapel Street, P.O. Box 1673, New Haven, Ct. 06507, 777-6465 or 735-6229 or the Greater Bridgeport Heart Association, 185 Park Avenue, Bridgeport, Ct. 06604, 367-7421.

A Review of Human Solid Organ Transplantation

John J. Bergan, M.D.

Organ transplantation is of great interest to surgeons, especially that small number who daily engage in this surgical event. The Organ Transplant Registry, administered by the American College of Surgeons under contract from the National Institutes of Health, has been looked to for an accurate assessment of transplant results. Now once again, the decision to continue the activities of the registry has been made. An application for renewal of the contract with the National Institutes of Health has been submitted. This is a news event only because kidney transplantation in particular has become a somewhat routine procedure and the question has arisen whether or not the registry should continue. Planned continuation is a direct response to requests from transplanters to go ahead.

During the past six years, the registry has functioned on the 7th floor of College Headquarters. Its annual report on renal transplantation is once again in press in the *Journal of the American Medical Association*[1], as is a special study reporting the results of renal transplantation in congenital and metabolic diseases.[2]

Table 1, below, summarizes the status of human solid organ transplantation as of January 1, 1975.

The following review of experimental solid organ grafting has been prepared for the registry by physicians who are particularly interested in certain areas of organ transplantation. They are: Carl G. Groth, associate professor, Department of Surgery, Huddinge Hospital, Karolinska Institute, Stockholm *(liver)*; Marvin L. Gliedman, professor and chairman, Department of Surgery, Montefiore Hospital, Albert Einstein College of Medicine, Bronx, N.Y. *(pancreas)*; and Frank J. Veith, professor of surgery, also at Montefiore Hospital, Bronx, N.Y. *(lung)*.

Hepatic Transplantation

In 1973, hepatic transplantations were reported only from the four centers with the largest overall experience. Thus, Starzl in Denver performed 16 graftings in 13 patients, while Calne in Cambridge, England, Fortner in New York, and Najarian in Minneapolis reported five, two, and one, respectively. Orthotopic procedures again far outnumbered the heterotopic variants, the figures being 22 vs. two.

Six of the recipients suffered from biliary atresia, five from cirrhosis, and five from hepatitis. Five patients had hepatic malignancy. One of the latter patients had a Kupffer's cell sarcoma, a tumor previously not treated with hepatic replacement. Four of the 21 recipients were alive (Jan. 1975) 14 to 22 months after operation. The original disease of the survivors was biliary atresia (two cases), hepatitis (one case), and hepatoma (one case).

By January 1, 1975, the registry had recorded a world total of 189 orthotopic transplantations performed in 181 patients and the number of recipients that had survived beyond one, two, and three years was 24, 12, and six, respectively. Among the six long-term survivors, four patients enjoy health more than 3.5, 3.8, 5, and 5.5 years after transplantation. Two patients succumbed to infectious complications after 3.5 and five years, respectively. Of a world total of 39 recipients of heterotopic grafts, only one has survived beyond one year. This patient, a child treated for biliary atresia, is alive with functioning graft two years after the operation.

TABLE 1

CASES REPORTED TO THE ORGAN TRANSPLANT REGISTRY, JANUARY 1, 1975

	Heart	*Liver*	*Lung*	*Pancreas*	*Kidney*
Transplant teams	64	40	21	13	293
Transplants	263	228	36	36	19,907
Recipients	257	220	36	36	17,936
Alive with functioning grafts	44	20	0	1	approx. 8,000
Longest survival with functioning graft	6.2 yr.	5.5 yr.	10 mo.	2.7 yr.	18 yr.*
Longest current survival with functioning graft	6.1 yr.	5.5 yr.	—	2.7 yr.	18 yr.

**Identical twin transplant*

DR. JOHN J. BERGAN, FACS, Director, American College of Surgeons, National Institutes of Health Organ Transplant Registry, Chicago, Ill.

Reprinted with permission from the Bulletin of the American College of Surgeons, March, 1975.

Over the last four years, the number of patients undergoing hepatic transplantation has remained fairly constant, as has the fraction of patients surviving the procedure. The main causes of failure remain: homograft rejection, sepsis due to immunological crippling of the host, and complications from the reconstructed biliary tract.

Pancreatic Transplantation

Human pancreas transplantation has not changed appreciably since the last registry report.[3] A total of 36 transplants are reported to the registry and this represents an increase of four since the last report. The technics of implantation continue to show variety. Two segmental grafts (body and tail) and two pancreaticoduodenal allografts have been transplanted most recently. One of these had a ligated pancreatic duct, the others employed either a duodenum or the ureter for exocrine drainage.

In considering the group of segmental pancreatic grafts with ligated ducts of Wirsung, we note a high incidence of persistent pancreatic drainage. Suspected exocrine leakage via cut lymphatics which act as an accessory drainage system has been confirmed by intact duct closure seen at subsequent graft examination. It would appear to be a hazardous approach now to perform pancreas grafting without a technic to avoid peripancreatic collection of protein-rich pancreatic ferments that inevitably will become infected in the immunosuppressed patient.

While the early review of the patients was unclear with regard to pancreatic allograft rejection, it is now clear that the pancreas does undergo typical rejection crises characterized by a low insulin output and impaired exocrine output, where these are monitored. It has been suggested that those patients who are less debilitated and non-azotemic are more liable to immune response affecting the gland.

The experience from 1966 has clearly demonstrated that the functioning vascularized pancreatic allografts of the segmental or total gland will correct the metabolic deficiencies of diabetes and free the patient from a need for insulin. Though four patients progressed for time periods of 10, 12, 22, and 32 months with functioning grafts, it has yet to be determined that the correction of the metabolic features of diabetes will stabilize or cause regression of the vascular complications of the disease. It appears important, in view of the predictable course of the nephropathy, that clinical investigations be carried out to determine if failing renal function can be stabilized or improved by a successful pancreatic allograft.

Quite clearly, the transplantation of endocrine tissue in the therapy of diabetes remains highly investigational. The possibility of a successful islet transplantation in the cure of juvenile diabetes mellitus is, at present, the major thrust in the therapy of this disease. It would appear that parallel programs to define the potentials of a successful metabolic correction of the diabetes mellitus by one technic or the other are in order in carefully planned investigational programs.

Lung Transplantation

Lung transplantation over the years has proven exceedingly difficult. As of January 1975, 36 human lung transplants have been performed. One patient survived ten months, one six months, and one two months after transplantation.

Bronchial anastomotic problems have been a serious cause of difficulty in long-surviving human lung transplants. In two of the three patients who lived more than one month after operation, death was caused directly by problems at the bronchial anastomosis. In the third patient, there was significant stenosis at this site and death was due to a combination of infection and rejection in the transplant. Rejection with or without infection was the most serious problem in the other human transplants that lived from five days to one month after transplantation. Problems arising at the bronchial anastomosis were also a common cause of difficulty in this group of patients.

The role of complicating factors arising in the remaining lung continues to be controversial. This autologous diseased lung certainly can be a focus of sepsis and may be a contributory cause of the ventilation-perfusion imbalances that have been observed in emphysematous patients who have received single lung transplants. Recent work indicates that some decreased function in the transplant must occur before these ventilation-perfusion imbalances become serious or fatal.[4] Causes of decreased transplant function include rejection, infection, and the reimplantation response.

Cardiac Transplantation

During 1973, 33 heart transplants were performed by 11 teams, four located in the United States, three in France and one each in Belgium, Canada, England, and South Africa. Eight of the 33 patients were alive (Jan. 1975) from one to two years after transplantation. Three others lived for 10, 13, and 18 months before dying of graft rejection and infectious complications. The team at Stanford (Calif.) University is responsible for 15 of the 33 transplants and six of the eight patients surviving the 1973 surgery are Stanford patients.

Twenty-seven heart transplants were reported to the registry in 1974. Only Shumway and Lower in the United States were active, though six other teams participated worldwide. Seven cases were done in

France and teams in Australia, Belgium, and South Africa reported one case each. At the end of 1974, the registry had recorded a total of 263 heart transplants in 257 patients; 44 were alive. The number of recipients that had survived one, three, five, and six years was 55, 21, nine, and five, respectively. On January 1, 1975, three recipients were alive and well more than six years after transplantation. Three long-term survivors died during 1974. They were: Louis B. Russell, Jr. (six years, three months); Dusan Vlaco (six years, two months); and Ralph Trout, the longest survivor in the Stanford series (five years, four months). Of course, the biggest heart transplant news came from South Africa where Barnard's team performed two auxiliary grafts with survival of both recipients.

Long-term prognosis of cardiac recipients can best be judged by the experience at Stanford where an average of one case per month has been done since 1968. By January 1, 1975, there were 79 patients in the Stanford series and 29 of them were alive. The remarkable postoperative survival rate achieved by this group is 44 percent surviving at one year, 39 percent at two years, 24 percent at three years, and 20 percent at four and five years—for an overall figure of 33 percent. In the past year, Stanford's one-year figure has been 50 percent.

Acknowledgements

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Experimental solid organ registries are under the administrative direction of Pauline Olsen who tirelessly pursues each case to insure accuracy of registry information.

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The Physician and the Dying Patient

Report of the Judicial Council, AMA

Introduction

The Connecticut Delegation to the AMA House of Delegates introduced Resolution 11 "Patient's Right to Die in Dignity" in the House at its June 1973 meeting. The House referred the Resolution to the Judicial Council "for report back at the 1973 Clinical Convention."

Resolution 11 contained a "background statement" and a resolved clause that asked approval of the following statement:

TO MY FAMILY, MY PHYSICIAN
MY CLERGYMAN, MY LAWYER—

If the time comes when I can no longer actively take part in decisions for my own future, I wish this statement to stand as the testament of my wishes. If there is no reasonable expectation of my recovery from physical or mental and spiritual disability, I, ______________________________, request that I be allowed to die and not be kept alive by artificial means or heroic measures. I ask also that drugs be mercifully administered to me for terminal suffering even if in relieving pain they may hasten the moment of death. I value life and the dignity of life, so that I am not asking that my life be directly taken, but that my dying not be unreasonably prolonged nor the dignity of life be destroyed. This request is made, after careful reflection, while I am in good health and spirits. Although this document is not legally binding, you who care for me will, I hope, feel morally bound to take it into account. I recognize that it places a heavy burden of responsibility upon you, and it is with the intention of sharing this responsibility that this statement is made.

____
Signature

____
Witness-Date

This statement was approved by the House of Delegates of the Connecticut State Medical Society on April 24, 1973.

In February, 1973, the House of Delegates of the Medical Society of the State of New York approved the following statement:

"The use of euthanasia is not in the province of the physician. The right to die with dignity, or the cessation of the employment of extraordinary means to prolong life of the body when there is irrefutable evidence that biological death is inevitable, is the decision of the patient and/or the immediate family with the approval of the family physician."

A member of the Association sent the Council the form he had drafted to express his wishes. Because it is simple and non-legalistic the Council repeats it.

TO MY FAMILY, TO MY PHYSICIAN—

Should the occasion arise in my lifetime when death is imminent and a decision is to be made about the nature and the extent of the care to be given to me and I am not able at that time to express my desires, let this statement serve to express my deep, sincere and considered wish and hope that my physician will administer to me simple, ordinary medical treatment. I ask that he not administer heroic, extraordinary, expensive or useless medical care or treatment which in the final analysis will merely delay, not change, the ultimate outcome of my terminal condition.

____
Signature

____
Date

In addition to the adoption of policy statements medical societies and medical journals have encouraged discussion of terminal medical care and the wishes of the dying patient in respect to that care. Ethicians, philosophers, theologians and others outside the profession of medicine have actively written about and discussed this subject. Legislation has been introduced in state legislatures regarding the "right of an individual to refuse medical or surgical means or procedures calculated to prolong his life" and "relating to the right to die with dignity."

The Judicial Council, by way of introduction, cannot help but observe that while it seems that there is a consensus and agreement in regard to the concept, there is considerable difficulty in expressing in words what that consensus or agreement is. Illustrative of semantics involved is the confusion between *euthanasia* and *death with dignity;* and the lack of understanding or agreement about their different connotations.

Survey

The Council asked each state medical association if it had policy on the subject and invited comment on Resolution 11.

The Council forwarded copies of the Resolution to each of its Consultants (and is gratified with their wholehearted and extremely valuable cooperation.)

Letters on the subjects of "euthanasia and death with dignity" were sent to Churches in the United States whose combined memberships include over 50% of the population. The replies received from all three groups were helpful to the Council.

It reviewed a mass of literature in scientific and non-scientific journals. AM NEWS, AMAGrams and the Green Sheet solicited comments from the members on the subject of medical care for the dying patient. The member-response was gratifying.

Findings:

In addition to the statement of the Connecticut State Medical Society, the Euthanasia Education Council has drafted and widely distributed "A Living Will." The Oregon Medical Association has prepared and distributed, in connection with the state's anatomical gift act, a wallet sized card, which is called "a living will."

There is little sentiment in favor of euthanasia, that is, the direct, intentional, voluntary termination of life.

There is a consensus that, although a physician must decide which treatment is indicated and which is not, the patient needs to agree when the options are explained to him.

There is a consensus that insofar as it is possible a patient's wishes regarding care in terminal illness should be respected.

There is a consensus that, insofar as possible, patients should not be discouraged from indicating, in writing, their wishes regarding refusal of medical treatment during terminal illness; and these wishes should be respected, insofar as possible, even after patients are no longer able to participate actively in decisions about their medical treatment in their last illness.

In some discussions of the right of patient to refuse medical care in terminal illness there is a lack of clarity because those discussions fail to relate to terminal illness. A patient well adjusted to kidney dialysis, lives with "a physical disability from which he will not recover." A mentally retarded infant suffers from "mental disability from which he will not recover." A diabetic is irreversibly ill.

When the individual asks that medical treatment be withheld in some physical disability from which he may not recover, yet will not die if ordinary care is given—what must the physician do? Is the wish of the father—or mother of two, three or four small children to be accorded the same weight as the wish of a great-grandparent under similar medical conditions?

Recommendations:

1. The Council recommends that the several state, county and specialty medical societies encourage and promote discussions of the reciprocal rights and duties of physicians and patients-suffering-terminal-illness.

2. The Council recommends that the House not endorse any particular form to express an individual's wishes which relate prospectively to his final illness.

Physicians may, and indeed should, be encouraged to discuss death and terminal illness with patients. Physicians may, and indeed should, respect expressions of patient's wishes regarding medical care during terminal illness but may, and indeed should, feel free to question those wishes with patient's competent legal representative or by appropriate judicial proceedings when the circumstances of a particular situation seem to require it.

The Council recommends that the House adopt the following statement to serve as a guideline for physicians:

The intentional termination of the life of one human being by another—mercy killing—is contrary to that for which the medical profession stands and is contrary to the policy of the American Medical Association.

The cessation of the employment of extraordinary means to prolong the life of the body when there is irrefutable evidence that biological death is imminent is the decision of the patient and/or his immediate family. The advice and judgment of the physician should be freely available to the patient and/or his immediate family.

The Psychophysiology of Pain

Dr. J. Blair Pace, Chairman of the Division of Family Practice at the California College of Medicine, University of California, Irvine, gave this "10 Point Summary of Changing Concepts in the Psychophysiology of Pain" to family doctors attending the Annual Scientific Assembly of the American Academy of Family Physicians in the Los Angeles Convention and Exhibition Center:

1. All pain is real, pain being a purely personal and subjective experience. The physician must not regard pain of psychological origin as unimportant.
2. There is no medical term "malingering." Malingering is an accusation and no therapeutic relationship can be based upon it. Medically there are only faulty or socially unacceptable coping mechanisms.
3. Acute pain relates directly to anxiety. The significance of the pain to the patient is all important.
4. Chronic pain relates directly to depression; secondarily, in chronic pain, we see the response altered by the manipulative value of the pain, the secondary gains from the pain, and the defensive needs of the patient for retaining the pain.
5. Not nearly all back or neck pain is due to disease of the intervertebral disc.
6. Muscle spasm is the result, not the cause of pain. Muscle relaxants have very limited use and validity, and then only for short periods of time.
7. There are no laboratory or X-ray findings that are valid in the majority of pain syndromes. History and detailed physical examination are still fundamental.
8. Improved body mechanics and exercise, not rest and bracing, are the key therapy modalities in chronic pain, especially neck or back pain.
9. Local block or local anesthesia injections are both diagnostic and therapeutic.
10. Major psychoactive drugs are more useful and less habituating than the commonly used minor tranquilizers.

Finally, Dr. Pace, an Academy member, stated that no major surgery should be considered without psychological evaluation, "unless there are gross neurological deficits."

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main purpose of drug information for the patient is to get his cooperation in following a drug regimen.

Preparation and distribution of patient drug information

We would hope to amass information from physicians, medical societies, the pharmaceutical industry and centers of medical learning. The ultimate responsibility for uniform labeling must, however, rest with the Food and Drug Administration. There is nothing wrong with this agency saying, "this information is generally agreed upon and therefore it should be used," as long as our process for getting the information is sound.

Distribution of the information is a problem. In great measure it would depend on the medication in question. For example, in the case of an injectable long-acting progesterone, we would think it mandatory to issue two separate leaflets—a short one for the patient to read before getting the first shot and a long one to take home in order to make a decision about continuing therapy. In this case, the information might be put directly on the package and not removable at all. But for a medication like an antihistamine this information might be issued separately, thus giving the physician the option of distribution. This could preserve the placebo use, etc.

It is in the distribution of patient information that the pharmacist may get involved. As professionals and members of the health-care team and as a most important source of drug information to patients, pharmacists should be responsible for keeping medical and drug records on patients. It is also logical that they should distribute drug information to them.

Realistic problems must be considered

We have to expect that the introduction of an information device will also create new problems. First, how can we communicate complex and sophisticated information to people of widely divergent socioeconomic and ethnic groups? Second, what will we say? And third, how can we counteract the negative attitude of many physicians toward any outside influence or input? Hopefully the medical profession will respond by anticipating the problems and helping to solve them. Assuming we can also solve the difficulty of communicating information to diverse groups throughout the United States, our remaining task will be the inclusion of appropriate material.

What information is appropriate?

In my opinion, technical, chemical and such types of material should not be included. And there is no point in the routine listing of side effects like nausea and vomiting which seem to apply to practically all drugs, unless it is common with the drug. However, serious side effects should be listed, as should information about a medication that is potentially risky for other reasons.

Other pertinent information might consist of drug interactions, the need for laboratory follow-up, and special storage requirements. What we want to include is information that will help increase patient compliance with the therapy.

Positive aspects of patient drug information

Labeling medication for the patient would accomplish a number of good things: the patient could be on the lookout for possible serious side effects; his compliance would increase through greater understanding; the physician would be a better source of information since he would be freer to use his time more effectively; other members of the health-care team would benefit through patient understanding and cooperation; and, finally, the physician-patient relationship would probably be enhanced by the greater understanding on the part of the patient of what the physician is doing for him.

Only the doctor can remove that fear by 20 or 30 minutes of conversation.

I'm not suggesting that we withhold any information from the patient because, first of all, it would be totally dishonest and secondly, it would defeat the very purpose of the insert. I do think that a patient on the birth control pill should know about the incidence of phlebothrombosis.

If you're going to tell a patient the incidence of serious adverse reactions, then you have to tell him that a concerned medical decision was made to use a particular medication in his situation after careful consideration of the incidence of complications or side effects.

Emotionally unstable patients pose a special problem

There are patients who, because of severe emotional problems, could not handle the information contained in a patient package insert. Yet if we are going to have a package insert at all, we just can't have two inserts. I think we might simply have to tell the families of these patients to remove the insert from the package.

Legal implications of the patient package insert

Just what effect would a patient package insert have on malpractice? We could try to avoid any legal implications by pointing out that the physician has selected a particular medication because, in his professional judgment, it is the treatment of choice. For instance, you can't tell everyone taking antihistamines not to work just because a few patients develop extreme drowsiness which can lead to accidents. And what about the very small incidence of aplastic anemia rarely associated with chloramphenicol? If, based on sensitivity studies and other criteria, we decide to employ this particular antibiotic, we do so in full knowledge of this serious potential side effect. It's not a simple problem.

How do we handle an insert for medication used for a placebo effect?

With rare exceptions, physicians no longer use medications for a placebo effect. This question does raise the issue of how a patient may react to receiving a medication without a package insert.

Preparation of the package insert

The development of the insert ought to be a joint operation between physicians, the pharmaceutical industry, the A.M.A. and the F.D.A.

I view the A.M.A.'s role as a coordinator or catalyst. It is the only organization through which the profession as a whole, irrespective of specialty, can speak. It has relatively instant access to all the medical expertise in this country. And it can bring that professional expertise together to ensure a better package insert. The A.M.A. can work in conjunction with the industry that has produced the product and which is ultimately going to supply the insert.

I don't think we should rely, or expect to rely, on legislative committees and their nonprofessional staffs to make these decisions when it is perfectly within the power of the two groups to resolve the issues in the very best American tradition—without the government forcing us to do it. I think the F.D.A. has to be involved, but I'd like them to become involved because they were asked to become involved.

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Summary of Actions
Council Meeting
Thursday, June 12, 1975

I. Attendance

Present in addition to the Chairman, Dr. D. A. Grendon, and the Vice Chairman, Dr. Jerome K. Freedman, were Drs. Van Syckle, Spitz, Friedberg, Backhus, Nolan, Root, Jr., Hess, Bradley, Cramer, Fabro, Granoff, Rubinow, Ragland, Jr., James, Krinsky, Sonnen, Klare, Beck, Canzonetti, Harkins, Magram, Mendillo and Barrett.

Also present were: Mrs. Lindquist, Mr. Tomat, Mr. Sweeney and Dr. Richards.

Absent were: Drs. Johnson, Gardner, Kamens, McGarry, Robinson, Eslami, Dambeck and Bird.

II. Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of May 21, 1975.

Life Memberships

It was VOTED to approve applications for Life Membership received from eligible Active Members as follows:

Thomas P. Cody, 241 Main Street, New Canaan.
Stephen L. Derkash, Rockwood Lane Spur, Greenwich
Meyer Etkind, 1546 Chapel Street, New Haven
Reuben Rothblatt, 132 Mansfield Avenue, Willimantic
Elmo D. Zsiga, 303 Clinton Avenue, Bridgeport
William E. Pola, 41 Lexington Street, New Britain

Date of Next Meeting

The Chairman set the date of the next meeting of the Council for Wednesday, July 16, 1975.

III. Old, New and Special Business

Resignations, Appointments, Etc.

(a) *Cancer Coordinating Committee:* It was VOTED to accept the resignation of Allen B. Silberstein, Middletown, as a member of the Committee. It was further VOTED to appoint John L. Meyer, Putnam, to membership on the Committee.

(b) *Committee on Cooperation with Medical Schools of Connecticut:* It was VOTED to accept the resignation of Herman Wolfson, Newington, as a member of the Committee.

Report—Committee on Statewide Medical Planning

It was VOTED to accept for filing a report of the Committee which covered a number of subjects on which the Committee had filed a preliminary report previously ("Deficiencies in Delivery of Health Care; Health Education"). It was further VOTED to approve (with some amendments) recommendations of the Committee in several categories as follows:

(a) *Home Care:*

1. That the Council (for the Society) support the concept of federal and state funding for home care programs and that the Health Insurance Council, Connecticut Blue Cross, Connecticut Medical Service and the CSMS Committee on Legislation be informed of such support.
2. That the Council (for the Society) support the concept that all home health care programs should be coordinated closely with patients' attending physicians.
3. That the Council request the Committee on Public Relations to develop an external and internal educational program on home care for publication and distribution to the membership, if feasible.

(b) *Emergency Medical Services:*

1. That the Council endorse the report of the Committee on Accident Prevention and Emergency Medical Services (attached to the report of the Committee on Statewide Medical Planning) as the official position of the Society on the subject of emergency medical services and EMS programs.
2. That the subject report of the Committee on Accident Prevention and EMS be referred to the Committee on Public Relations to be used as the base for a news release or several news releases on the subject of emergency medical services, thus hoping to educate the public on the use of such facilities and services.

3. That the subject report of the Committee on Accident Prevention and EMS be sent as information to the Deputy Commissioner of the State Health Department who is in charge of the Department's emergency medical services program.

(c) *Health Education:*

1. That the Council (for the Society) support "The Comprehensive School Health Education Act of 1975" (S.554—Sen. Clark-Iowa, and H.R. 2599—Rep. Meeds-Wash.), and inform Sen. Clark, Rep. Meeds, Connecticut senators and representatives, and the AMA of this supporting action of the Council. In brief, the companion bills call for the enactment of a three-year, $140 million program to support health education in the primary and secondary school systems. Grants could be made, via state commissioners of education, for teacher training, pilot and demonstration projects, and comprehensive school programs for health education. Information concerning the bills appeared in the AMA *Legislative Roundup,* issues of 2/7/75 and 3/14/75.

Council Ruling re $10 Assessment to Establish CMI, Inc.

Being apprised by Staff that a number of members have questioned whether payment of this assessment in conjunction with 1975 CSMS membership dues is mandatory, the Council VOTED to rule that payment of the subject assessment of $10 per dues paying member to establish the Connecticut Medical Institute, Inc. (House of Delegates, 3/14/74) is mandatory and must be paid in order for the member to continue as a member of the Society in good standing. Members who are or become delinquent in payment of the assessment are to be notified of this ruling of the Council, by registered mail with return receipt.

Communication re "Sportsmed" Publication

It was VOTED to accept for filing a letter received from Norman A. Zlotsky, Rockville, Editor of "Sportsmed," a newsletter for athletic directors, coaches, trainers and other interested persons published under the auspices of the Society as an activity of the Committee on Public Relations. In the first portion of his letter, Dr. Zlotsky requested an additional allocation of $200 (to the previous allocation of $1,950) with which to complete publication and distribution of the fourth and last issue of the pilot four-issue series. On recommendation of the Fiscal Subcommittee, the Council VOTED to approve an additional allocation of $200 to be used for the purpose stipulated by Dr. Zlotsky.

The second portion of the letter contained a request from Dr. Zlotsky that the Council consider forming a new committee of the Society, to be called the "Committee on the Medical Aspects of Sports," and a listing of various functions that might be assigned to such a committee in the area of concern, among which was "to act as an Editorial Board for 'Connecticut Sportsmed.' " Since "Sportsmed" is a function of the Committee on Public Relations, and since Dr. Zlotsky works with the Committee but is not a member of it, it was further VOTED to request the PR Committee to file with the Council a summary evaluation report on the pilot "Sportsmed" project and make recommendations regarding its continuance, and to refer Dr. Zlotsky's letter to the Committee for information and comment on his proposal concerning the formation of a committee on the medical aspects of sports which could serve as an Editorial Board of "Sportsmed."

Report—Ad Hoc Committee to Study Full-Time Chiefs of Service Program

It was VOTED to receive as information, and with appreciation, a subject report filed by the Ad Hoc Committee. In brief, the report recounted the efforts of the Committee to make a study of the subject; concluded that an in-depth and definitive report on the subject was beyond the capability of the Committee under present circumstances, and recommended that the Society "support and assist" studies that are made by other agencies.

After protracted discussion, it was further VOTED that the Council request of the Executive Committee of the Connecticut Regional Medical Program that a member of the Society be authorized to serve with Dr. John Thompson and Dr. Glasgow in a study of full-time chiefs of service being made under CRMP auspices and to participate in the development and conclusions of the report of such study. It was further VOTED to recommend to the CRMP Executive Committee that Charles M. Krinsky, New London, a CSMS-designate on the CRMP Advisory Board, be the member of the Society authorized to so serve and participate.

It was further VOTED to express the opinion that "the Council believes it is within the purview of the State Commission on Hospitals and Health Care to develop information concerning the cost effectiveness of the full-time chiefs of service programs in Connecticut hospitals and that this information should be made available to the Society via Sidney L. Cramer, Hartford, CSMS representative on the Commission."

Finally, it was VOTED that the Ad Hoc Committee be continued for the purpose of monitoring developments in the field of full-time chiefs of service programs.

Appointment of Ad Hoc Committee to Study Council Procedure

As advocated by the President, Guy W. VanSyckle, the Council VOTED to direct the Chairman to appoint an ad hoc committee of not more than seven members of the Council to make a study of, and make recommendations to the Council on, means of improving the Council's efficiency and productivity.

Membership Photographing Program

It was VOTED to approve a proposal of the Allen Photographic Corporation, Detroit, Michigan, to repeat the program undertaken and successfully completed in 1969 whereby a photograph is taken of all members of the Society at no cost; the Society receives a complete and updated file of photographs of the members at no cost; and the decision of members to purchase mounted prints of their photographs for their personal use is entirely voluntary.

Report—Committee on Professional Liability

It was VOTED to accept for filing a report of the Committee, consisting of: A copy of a bill (H.B. 7276), recently passed by the General Assembly and signed by Governor Grasso, which designates the Assembly's joint standing committee on insurance and real estate as an interim committee to study "the high cost of medical malpractice insurance" in Connecticut and to present a report, with recommendations for legislative action, to the General Assembly not later than 3/1/76; a copy of a letter to Governor Grasso, dated 6/5/75, informing her of the Society's readiness to make its expertise in the malpractice area available to the legislative study committee; notice of the Committee's intention to develop specific proposals for legislative malpractice remedial action at its next meeting on 6/25/75; and a recommendation of the Committee "That the Society engage sufficient staff in the field of governmental and legislative activities and that, for the present, such staff personnel give priority to the malpractice crisis." It was VOTED to approve the Committee's recommendation.

Since neither the Committee on Professional Liability nor the members of the Council appeared to have a clearcut idea of what type of staff personnel would be most appropriate for carrying out the duties described (regular staff person or persons, attorneys, PR, lobbyist, etc.), it was VOTED to appoint an ad hoc committee to act for the Council in this matter as follows: The President, chairman; the PresidentElect; the Chairman of the Council; the Chairman of the Committee on Professional Liability; the Chairman of the Committee on Legislation; and the Executive Director. The ad hoc committee was charged with selecting and engaging such personnel as are deemed necessary and most appropriate to assist, as a first priority, the Committee on Professional Liability and the Society generally to initiate and follow through on legislation designed to alleviate and/or eliminate the problems which are contributing to the high cost of malpractice insurance. The Council also VOTED to give the ad hoc committee full authority to commit the Society to expend up to $100,000 to implement the charge assigned to it.

It was further VOTED "that there shall be a joint meeting of the Council with the Committee on Professional Liability, such meeting to be called at the discretion of the Committee following its meeting on 6/25/75."

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on June 12, 1975. Detailed minutes of the meeting are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine.*

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Internal Medicine: Available summer of 1975. Board eligible. New York license. Trained at Upstate Medical Center. Prefers group or associate practice. Peter P. Cullen, M.D., 11-86 Granpian Road, Liverpool, N.Y. 13088.

Internal Medicine: Available summer of 1975. Completing training at St. Mary's Hospital. Board eligible. Medium or small community desired. Vincent A. Ippolito, M.D., 38 Golden Hill Road, Waterbury, CT. 06706.

Ophthalmology: Presently in practice. New York license. Trained in France and at the University of Pennsylvania. 49 years old. Interested in medium sized community. Can relocate on short notice. Solo or partnership. Write Z.I.K., M.D., c/o C.S.M.S.

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ON THE FRONTIERS OF DIABETIC RESEARCH...

What is Diabetes?

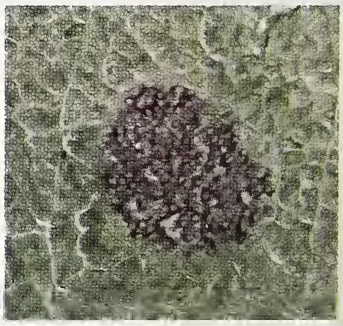
Although a medical scribe of ancient Egypt first made reference to diabetes mellitus in man, today, nearly 4000 years later, only meager specific knowledge exists as to the basic cause of the disease. Without such knowledge it has been possible to provide for limited control only *after* diabetes manifests itself in the form of elevated blood glucose. The possibility of prevention or even cure of diabetes, however, must depend on a full understanding of the genetic defect and/or defects underlying the disease. Our current understanding of diabetes may be compared to our former understanding of another disease of metabolic abnormality, phenylketonuria; only when the genetic lesion of that disease was discovered did it become possible to institute current programs of treatment.

Basic Diabetes Research at Upjohn

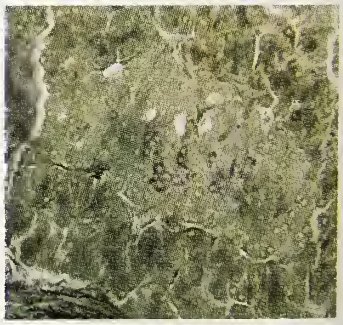
For more than ten years the Diabetes and Atherosclerosis Research Group at The Upjohn Company (W. E. Dulin, Director; G. C. Gerritsen; M. G. Soret; A. Y. Chang) has addressed itself, in a series of unique experiments, to the very basic question: What is diabetes? As with all such fundamental research, practical results are slow in coming and the work of the Group has at times raised more questions than it has been able to answer. It appears now, however, that the research is moving toward important conclusions which may, over the next several years, have significant bearing on our understanding of diabetes and, hopefully, on our ability to control it.

The Chinese Hamsters

In the middle fifties, a group studying cytogenetics in Chinese hamsters at the Children's Hospital Medical Center, Boston, Massachusetts, discovered that certain hamsters develop diabetes spontaneously. The Upjohn Research Group obtained some of these hamsters in 1962, and by controlled inbreeding, succeeded over the years in producing large numbers of diabetic animals for study. To assure continuity of the research in the event of a catastrophe, duplicate breeding stock of all the inbred families are maintained at another site. These are the only such colonies in the United States today. In the course of the research, Upjohn has cooperated with scientists in academic



Normal Chinese hamster, pancreatic tissue. Note blue-stained insulin granules which appear within the beta cells of the islet of Langerhans.



Diabetic Chinese hamster, pancreatic tissue. Insulin granules are almost totally absent. Though beta cells are present, there is some degranulization and vacuolization. The diabetic process is similar to that observed in human pancreatic tissue.

centers, both in America and abroad, in various specialized studies. When possible, these scientists have come to work for a time in Upjohn laboratories. In other cases, specially selected hamsters were transported to outside research facilities.

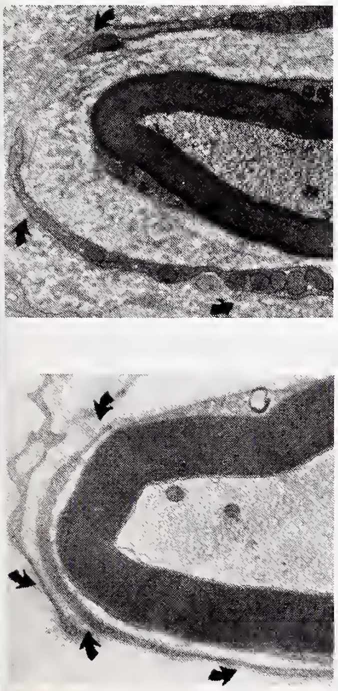
Closer to Man

While other species besides man develop diabetes spontaneously, the Chinese hamster appears to be the best laboratory animal model to study, since its disease is remarkably similar to diabetes in man. Chinese hamster diabetes, like human diabetes, is a complex disease. Like humans, the hamsters have more than one variety of diabetes, including the juvenile, insulin-dependent type as well as the maturity-onset type. They also develop pathological lesions in the retina, kidney, and peripheral nerves, as do human diabetics.

Diabetes is as complicated genetically in hamsters as it is in man. The type and severity of the disease appears to vary with the number of genes involved. Fortunately, genetic analysis can progress faster in the hamster since two or three generations can be produced per year.

Hamsters with Diabetic Genes Overeat

Perhaps one of the most significant observations is that hamsters with diabetic genes have significantly increased food consumption prior to development of clinical signs of diabetes. Further, if the animal with diabetic genes were limited to a normal amount of food, onset of diabetes could be delayed and reduced in severity, and the animal could have a normal life span of 34-35 months. Those animals that develop the clinical symptoms have a shorter life span, which varies with the severity of the disease. Interestingly, decreases in the incidence of human diabetes were noted during the siege of Paris in 1870, and during and immediately after World War II in Europe. It has been postulated that decreased food intake during these periods may have delayed the onset of the disease or reduced its severity to a point where hyperglycemia did not appear.



Peripheral diabetic neuropathy. Top photo, Chinese hamster; bottom photo, 58-year-old diabetic man. The encirclement of myelinated nerve fibers by thin Schwann cell processes, indicated by arrows, is a cellular reaction to chronic demyelination, and is a characteristic finding in this condition in both man and the Chinese hamster.

74J-3795-6 B

Implications for the Future

The purpose of the Upjohn Research Group is to attempt, through its work with the Chinese hamsters, to find the basic genetic lesion or lesions associated with diabetes. Such knowledge could provide the information necessary to predict the disease in humans, to define its exact mode of inheritance, and to initiate studies aimed at correcting the defect or defects. Hopefully, it will eventually be possible to devise methods to prevent the development of the abnormalities associated with the disease, if the defect or defects can be corrected. Such methods may replace all treatment in use today.

Already, a beginning has been made in the establishment of programs to apply the information gained from the hamster research. The Upjohn Group is currently working with pediatric endocrinologists in an attempt to define the genetics of human diabetes and to confirm retrospectively whether the discoveries concerning dietary manipulation in genetically diabetic hamsters can be applied to humans. Should the results of these investigations be positive, and if it becomes possible through further work with the hamsters to identify prediabetic humans before they develop signs of the disease, an enormous stride will have been made. Even though the investment in this research is made with no guarantee, this risk must be undertaken.

Note: For bibliography of published papers, please write to W. E. Dulin, PhD, Upjohn Diabetes and Atherosclerosis Research Group, 7241-25-9, Kalamazoo, Michigan 49001.

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Aetna Life & Casualty 484
Boehringer Ingelheim, Ltd. 4
Burroughs Wellcome Co. 498
Classified Advertising 522
Connecticut Blue Cross 492
David Dean Smith .... IFC
Dentocain Co. 522
Arthur W. Eade, Insurance 502
Elmcrest Psychiatric Institute 513
Kenwood Laboratories 474, 506
Eli Lilly & Co. .... FC
Pharmaceutical Manufacturers
  Association .... bet. 516 & 517, 517
Physicians Planning Service Corp. 522
Roche Laboratories .... 2 & 3, IBC, BC
Roerig & Co. .... bet. 516 & 517
Sanibel Hospital, Inc. 505
Searle & Co., G.D. .... 516, bet. 516 & 517
Smith, Kline & French Laboratories bet. 516 & 517
The Upjohn Co. .... bet. 521 & 522
Waterbury Hospital Health Center 506

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Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 39, SEPTEMBER 1975, NUMBER 9

STAMFORD HOSPITAL CLINICAL ARTICLES

Guest Editor: Gerald O. Strauch, M.D.

Stewart A. King	**Quality of Life—The Continent Ileostomy**	523
Noel I. Robin	**Thyrotoxicosis, Hyperparathyroidism and Cushing's Syndrome**	526
Robert P. Carrillo, Gerald O. Strauch	**Pancreaticocolic Fistula**	530
Gerald O. Strauch	**Should We Attempt to Salvage the Injured Spleen?**	533
Malcolm S. Mitchell	**Tumor Immunology**	536
CSMS—Aetna Life & Casualty	**Professional Liability Insurance Program**	547
Kingman Brewster, Jr.	**The Government and the University**	555
Donald H. Naftulin, John E. Ware, Jr. and Frank A. Donnelly	**Doctor Fox Lecture: A Paradigm of Educational Seduction**	559
James M. Burke, Jr.	**Second Annual Nahum Award**	563
Owen H. Wangensteen	**Surgeons and Wound Management: Historical Aspects**	568
AMA Commission	**Emergency Medical Services**	575
Patrick Romanell	**Medicine and Pragmatism in William James**	577
Joseph Margolis	**Conceptual Aspects of a Patients' Bill of Rights**	582
Editorials: Gerald O. Strauch	**Surgical Learning in Community Hospitals**	543
Allan A. Brandt, Edward A. Rem	**EMS—The Politics of Saving Lives**	543
Fred Fabro	**Use of Extended Care**	545
Richard C. Tilton, et al	**Clinical Relevancy Revisited**	546

Table of Contents: page 1

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CONTENTS

scientific:

Quality of Life—The Continent Ileostomy, *Stewart A. King, M.D.* 523
Thyrotoxicosis, Hyperparathyroidism and Cushing's Syndrome: An Endocrinologist Scans the Perioperative Period, *Noel I. Robin, M.D.* 526
Pancreaticocolic Fistula, *Robert P. Carrillo, M.D. and Gerald O. Strauch, M.D.* 530
Should We Attempt to Salvage the Injured Spleen? *Gerald O. Strauch, M.D.* 533
Tumor Immunology, *Malcolm S. Mitchell, M.D.* 536

editorials:

Surgical Learning in Community Hospitals—1975 543
EMS—The Politics of Saving Lives 543
Use of Extended Care 545
Clinical Relevancy Revisited 546

departments:

Reflections from the Dean's Office, *Robert U. Massey, M.D.* 540
The President's Page 541
From the Executive Director's Office 588
Physician Placement Service 594

special articles:

Professional Liability Insurance Program of the Connecticut State Medical Society: Fourth Annual Report, Aetna Life & Casualty, August 1975 547
The Government and the University, *Kingman Brewster, Jr.* 555
The Doctor Fox Lecture: A Paradigm of Educational Seduction, *Donald H. Naftulin, M.D., John E. Ware, Jr., and Frank A. Donnelly* 559
The Water Used in Artificial Kidneys, *James M. Burke, Jr.,* Second Annual Nahum Award 563
Surgeons and Wound Management: Historical Aspects, *Owen H. Wangensteen, M.D.* 568
The AMA Commission on Emergency Medical Services and the Emergency Medical Technician 575
Medicine and Pragmatism in William James, *Patrick Romanell, Ph.D.* 577
Conceptual Aspects of a Patients' Bill of Rights, *Joseph Margolis, Ph.D.* 582

miscellaneous:

Public Holds Doctors Liable for Malpractice Insurance Crisis 553
Suggestions for Minimal Obstetric and Pediatric Care 558
Special Notices 587
In Memoriam 591

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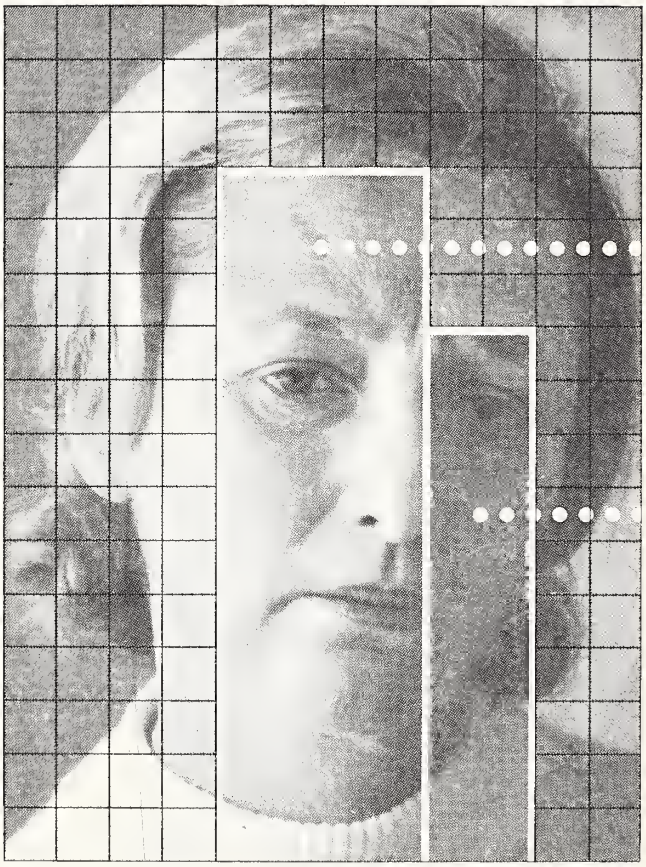

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Quality of Life—The Continent Ileostomy

Stewart A. King, M.D.

ABSTRACT—Ten patients in whom a continent ileostomy (internal ileal reservoir or Kock Pouch) was constructed are presented. The series includes the patient in whom the first such ileostomy successfully constructed in this country was performed. Seven of the ten patients attest to a dramatic improvement in life style and illustrate the high level of patient satisfaction with a continent ileostomy.

In 1969 Nils Kock, Professor of Surgery at the University of Goteborg, Sweden, described his experience with five patients in whom an internal ileal reservoir had been created following total colectomy for ulcerative colitis.[3] The reservoir was fashioned from terminal ileum by a technic which 1) prevented effective periastaltic activity in an ileal pouch, and 2) allowed emptying of the reservoir through a specially constructed ileal nipple. The result was a continent ileostomy which eliminated the need for an external appliance and was emptied by catheterization two to four times daily. Professor Kock's evaluation of his first twenty-five patients was published in April of 1971,[4] and it was this article that stimulated my interest.

The first opportunity to test the validity of the Kock procedure at the Stamford Hospital came in July of 1971. A 34-year old engineer (P.P. Case 1) with ulcerative colitis, having read a reprint of Professor Kock's article, accepted the recommendations of Dr. Howard Spiro of New Haven, Dr. Arthur Harrison, and myself that colectomy be performed provided that, if technically feasible, an internal ileal reservoir (Kock pouch) be constructed. Indication for colectomy was a ten-year history of ulcerative colitis with development of colonic strictures despite recent weight gain and relative clinical quiescence of the disease.

Total colectomy, abdominoperineal resection, and construction of a Kock pouch were performed on 25 August, 1971. The postoperative course was complicated by transient small bowel obstruction. The patient was discharged on 12 September, 1971, continent of feces and catheterizing the pouch four times daily. Laparotomy and lysis of a single adhesive band was required because of intestinal obstruction one month later.

At present, the patient wears a temporary appliance only when he has severe viral diarrhea. Catheterization of the pouch requires two to five minutes. There have been no evident ill effects. We believe this to be the first successful Kock pouch constructed in the United States.

Constructions of nine Kock pouches have subsequently been performed at the Stamford Hospital. Pertinent clinical data relating to the patients involved are listed in the Table.

The only patient undergoing construction of the Kock pouch at the time of total colectomy was the first patient in the group. All others had had total colectomy, with or without proctectomy, from ten months to over 16 years prior. We have considered total colectomy and proctectomy to be prerequisites to undertaking the Kock operation, and this philosophy dictated performance of proctectomy at the time of pouch construction in three patients who previously had undergone total abdominal colectomy.

Seven of the ten patients have suffered major complications following pouch construction. The most frequent of these, small-bowel obstruction, occurred in four patients. Suture-line leaks occurred in two patients. Other complications, each occurring in single instances, are listed in the Table.

No mortality was encountered.

Five patients are completely continent of flatus and feces. Only two patients are incontinent of feces.

The first three patients in the series had operations following Kock's originally described technic. The remaining seven had pouches fashioned by a modification later described by Kock.[5]

Brief comments concerning several individual patients seem in order.

K.D., Case 2, was never continent and now is crippled by short bowel syndrome; however, he is not considered a true pouch failure but rather a failure of colectomy due to dense adhesions, a complication of peritonitis following colectomy, and subsequent surgical interventions.

L.D., Case 3, did not achieve continence until pouch capacity increased. She achieves full flatus control by plugging the stoma with toilet tissue when she feels this to be socially important.

C.M., Case 8, suddenly developed intermittent incontinence four months after surgery. Colonoscopy revealed a small pouch and evidence of technical

---

DR. STEWART A. KING, Attending Surgeon, Stamford Hospital and St. Joseph Hospital, Stamford; Clinical Assistant Professor of Surgery, New York Medical College.

Reprint requests to: Stewart A. King, M.D., 70 Mill River Street, Stamford, CT 06902.

failure of the continence mechanism of the pouch. We are deferring attempts at operative correction in hopes that pouch size increase may lead to satisfactory control.

R.F., Case 9, developed episodes of incontinence four months after surgery. Colonoscopy of the pouch and proximal ileum with biopsy, as well as small-bowel radiographic studies, established a diagnosis of Crohn's disease. The presence of progressive enteritis precludes any optimism about the ultimate outlook for this patient and his pouch.

Discussion

At present the contraindications to primary construction of the internal reservoir are considered to be 1) high dosage maintenance steroid therapy, 2) granulomatous colitis, and 3) major emergency intervention in an acutely ill patient for hemorrhage, sepsis, or toxic megacolon. A relative contraindication is the presence of complex intraperitoneal adhesions, since our most common postoperative complication has been small bowel obstruction.

The difficulty in distinguishing Crohn's disease from ulcerative colitis is of deep concern. We are aware of unreported cases which have required resection of the pouch because of regional enteritis.

As a result of episodes of obstruction related to peanuts, sesame seeds, and kernel corn, we now recommend that these patients irrigate their pouches weekly with tap water until clear.

There are three major questions which this concept of an ileal reservoir poses:

1. Does it work?
2. Is it safe?
3. Why do it at all?

The first of these cannot be adequately answered at this time. Seventy per cent of this series are continent of feces, but communication with Dr. Kock reveals that several of his patients have also developed late incontinence. He has further modified his technic as a result. Only time will tell whether technical perfection is possible.

The second question logically breaks down into two phases, the immediate operative phase and the long-term, postoperative period. The procedure does possess major operative risk elements. Long suture lines are involved, and we have had two pouch suture-line leaks in these ten patients. With experience, it is probably as safe as most other major operative procedures. The long-term effects, especially as they relate to ileal physiology, are not quite as clear. Dr. Kock's initial group of patients are now eight years since their surgery and are uniformly doing well. My first patient is now more than three years and is without evident problems. A good deal of experimental work by Dr. Kock[1 2 6] would appear to substantiate an absence of deleterious effects on absorption. Presently, I still regard the procedure as experimental and will until we have a significant number of patients doing well after fifteen to twenty years with a continent ileostomy.

The final question really refers to what everyone associated with health care must accept as a major concern—the Quality of Life. The answer to this question must come from the patients, five in this series, who have lived with a conventional ileostomy and now have a continent ileostomy. It appears that if you are young and physically and socially active, a conventional ileostomy may not be quite your bag. A few quotations from these patients may help to establish their level of satisfaction.

T.P. had been accepted for medical school when he underwent colectomy. Concern over odor and other appliance problems brought about his switch to Veterinary Medicine. An interest in large animal husbandry and work with the Park Service led to the realization that he could not be secure about retention of an external appliance with the heavy work and rough contact entailed in wrestling cows, climbing trees, crossing swamps, and the like.

"An ileostomy is better than colitis, but the continent ileostomy beats the heck out of an ileostomy.

"Of course the big reason I wanted the conversion to the pouch was to get rid of the appliance so I could do a lot of things that I used to do. I could list many of these things. Some are very important and others are minor, but they add up making life a whole lot easier and downright fun again.

"I had an ileostomy for six years. I hated the damn thing but learned to put up with it. I have had the pouch for eight months. I consider myself an expert on the two because I had both. There is absolutely no comparison. I am 100 per cent tickled to death with the pouch."

L.D. was a lovely 19 year old artist.

"I can now do all of the things I used to and carry on normally without the cumbersome, embarrassing, costly, and sexually inhibiting external appliance. I simply have to wear the small stomal gauze pad, meaning that I only have to stock some tape, as opposed to glues, plates, powder, bags, etc. Of course I must always carry my plastic catheter when I leave home. It's all so simple! I'm very thankful and happy for the conversion and am aware that it is still improving as the internal ileal reservoir grows to capacity. It's beautiful to feel free again!"

M.D., a most attractive female airline co-pilot, had changed jobs, stopped skiing, and completely eliminated her previously active social life.

Patient Age Sex	Colectomy	Date of Pouch Construction	Operative Procedure at Time of Pouch Construction	Complications	Catheterization Frequency	Continence	
						Feces	Flatus
1 P.P. 34 Male	8/25/71	8/25/71	Total colectomy Protectomy Kock pouch	Small bowel obstruction	7 Daily	C*	Inc**
2 K.D. 24 Male	7/70	6/8/72	Proctectomy Kock pouch	Small bowel obstruction; fistulae; pouch resection	—	Inc	Inc
3 L.D. 19 Female	3/71	6/21/72	Kock pouch	Ureterolithiasis; suture-line leak with abscess	4-6 Daily	C	Inc
4 M.D. 27 Female	4/72	2/7/73	Proctectomy Kock pouch	—	3 Daily	C	C
5 T.P. 26 Male	2/69	7/9/73	Proctectomy Kock pouch	—	2-4 Daily	C	C
6 M.M. 28 Female	12/68	1/4/74	Resection ovarian cyst; cholecystectomy; Kock pouch	Partial small bowel obstruction	2-3 Daily	C	C
7 J.C. 29 Female	10/70	6/3/74	Kock pouch	—	3 Daily	C	C
8 C.M. 33 Male	11/73	6/20/74	Kock pouch	Suture-line leak with abscess	6-7 Daily	Inc	Inc
9 R.F. 49 Male	1/58	6/24/74	Resection terminal ileum; Kock pouch	Crohn's disease, proximal ileum	7 Daily	C	Inc
10 L.R. 40 Female	2/65	7/9/74	Kock pouch	Small-bowel obstruction; wound infection; pulmonary emboli	4 Daily	C	C

*C = Continent
**INC = Incontinent

"My major reason for seeking conversion, of course, was to eliminate wearing an appliance. But I was surprised to find that such a small change would make such a big difference. Physically, I'm not changed that much. I still have to empty the contents of my bowel. However, there has been such a big change in my life style, that I have to conclude that the appliance itself was the biggest stumbling block.

"Am I happy that I have undergone conversion? YES, YES, YES."

Finally, while advances in the medical and surgical treatment of ulcerative colitis have brought significant improvement in our ability to sustain patients, emergency colectomy all too frequently must be employed on desperately ill patients. Under these circumstances colectomy results in an heightened morbidity and mortality.

Elimination of the need for an external appliance results in a more normal life style and should encourage earlier operative intervention in patients with ulcerative colitis with a concomitant reduction in morbidity and mortality.

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Thyrotoxicosis, Hyperparathyroidism and Cushing's Syndrome: An Endocrinologist Scans the Perioperative Period

Noel I. Robin, M.D.

With few exceptions, medical, as opposed to surgical management, is the sole approach to the treatment of endocrinopathies caused by hormonal deficiencies. The time-honored management of the diabetic, hypothyroid and Addisonian patient supports this dictum. In states of hyperfunction, on the other hand, the modality often accepted for definitive amelioration is surgery. This may be necessary because of the neoplastic potential of the disease or, more commonly, because the derangement resulting from the state of hyperfunction is producing metabolic havoc. Extirpation of the offending structure can lead to a dramatic and definitive cure.

Despite the specific surgical remedy, the patient still requires intense and active medical involvement. Such management must deal with both prevention of hormonal action, especially detrimental in the perioperative period, and correction of preexisting derangement already brought about by hormonal excess. Treatment of this latter aspect may continue well beyond the operative procedure.

This paper will specifically deal with the management of thyrotoxicosis, primary hyperparathyroidism, and Cushing's syndrome. With development of insight into pathophysiology and recent advances in clinical pharmacology, patients with these disease states can be managed with a high degree of safety. Morbidity and mortality should not be greater than that expected from surgery performed in adjacent nonendocrine anatomic structures.

Thyrotoxicosis

The thyrotoxic state is a syndrome of multiple etiologies whose common denominator is a high level of circulating thyroid hormone and the associated clinical manifestations related to this hormonal excess.[1] Commonly, the disease state is either related to a circulating extrathyroidal stimulating factor (Graves' disease) or is associated with autonomous nodular thyroidal hyperplasia (toxic nodular goiter). Knowledge of the etiology can be important in that clinical manifestations, complications, therapy and prognosis are often contingent upon this information.

Graves' disease is usually a disease of younger women characterized primarily by manifestations of hypermetabolism. Heat intolerance, hyperhidrosis, nervousness, fatigue and weight loss are common complaints. Tachycardia is frequently present, but congestive heart failure is rare. Patients with toxic nodular goiter, on the other hand, often present with cardiovascular problems. These may be related to their generally older age at the time of disease and the associated increased vulnerability of the myocardium.

The treatment of Graves' disease is ordinarily medical.[2] Therapy is directed at the thyroid gland despite the fact that the thyroid may be the "innocent" victim of a hormonal stimulant, perhaps Long Acting Thyroid Stimulant (LATS). This is accomplished most effectively by employing an antithyroid agent [propylthiouracil (PTU) or methiamazole (Tapazole)] over a long course. These agents act by blocking organification, hence synthesis, of thyroxine. In addition, PTU inhibits peripheral conversion of thyroxine (T4) to triiodothyronine (T3), an active metabolite. As this disease is felt to be cyclic, cessation of the drug after a respectable (12-24 months) trial will often result in permanent remission. If illness is severe, other medical measures are often instituted. These include pharmacologic doses of iodide to block hormone release, sympatholytic agents to prevent peripheral hormonal action, and general supportive care. Unlike medical measures, which ultimately depend upon a cessation of self-limited extrathyroidal factors, radioactive iodine and surgical therapy are decisive and potentially definitive. Isotope therapy has the advantage of being relatively safe, despite potentially undesirable and often inevitable hypothyroidism.[3] Restraint is very important when considering administration of radioactive iodine therapy to potentially reproductive individuals. Long-term gonadal effects have yet to be elucidated.

Surgery has a distinct place in the therapeutic armamentarium. It should be considered in those patients who do not remit with antithyroid agents, or who have untoward side effects with their use. Patient inconvenience, unreliability, cosmetic disfigurement or obstructive symptoms may also be taken into consideration. Prior to surgery, it is absolutely vital that the clinical euthyroid state be achieved. Patients should not be hastily dispatched to subtotal

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thyroidectomy lest potentially dangerous complications such as tachyarrhythmias or even a full-blown thyroid storm ensue. Systemic deficits should be addressed through such avenues as nutritional and metabolic restoration. Classically, both antithyroid agents and iodides have been employed to render a clinically euthyroid state and to hypovascularize the operative field. The dose of PTU ranges from 50 to 150 mgm every 4-6 hours. Iodide is usually administered as 5 to 10 drops of a saturated solution of potassium iodide (SSKI) daily for 10 to 14 days prior to surgery. Clinical observations coupled with measurement of serum T4 (in concert with the RT3 in situations of binding protein abnormalities) are reliable indices to follow.

The introduction of beta-adrenergic blocking agents and recognition of their role in neutralizing the cardiovascular and systemic manifestations of thyrotoxicosis has led to considerable alteration in concepts of medical management.[4,5] Propranolol, when used alone, can produce fast and significant amelioration.[6] As these agents act peripherally, there are no alterations in plasma hormone concentrations and hence, clinical judgment and physical examination must be heavily weighted. Doses of 20 to 80 mgm of propranolol, orally, every 4 to 8 hours prior to surgery and a continuous slow infusion during operation have resulted in a marked reduction of metabolic and local complications. Because of its rapid effectiveness, use is of particular value in those patients selected for surgery because of intolerance to or untoward side effects of antithyroid agents.

All specific antithyroid therapy can be safely discontinued postoperatively. Because of the small but significant number of patients who may develop postoperative hypothyroidism, thyroid hormone therapy should be given at *full replacement* levels of L-thyroxine (0.2 mgm/day)[7] or its equivalent when oral feedings resume. Should recurrent thyrotoxicosis develop, this dose will not be of added physiologic significance and may even bring the patient's deranged metabolic state to earlier professional attention.

Infiltrative ophthalmopathy and pretibial myxedema are associated with Graves' disease and seem to be brought about by the same factors which result in thyroidal hyperstimulation. They are not of consequence to operation for hyperthyroidism unless pharmacologic doses of corticosteroids were recently used for correction of ocular problems. In that case, as in the case of any patient receiving prior steroid therapy, intra- and postoperative glucocorticoid coverage should be instituted.

As opposed to the previously discussed Graves' disease, medical therapy in nodular goiter is not considered a primary treatment but an important adjunct if surgery is elected. Radioactive iodine is employed as a therapeutic modality. Relatively high doses may be given without concern of producing hypothyroidism. Because of its immediate and predictable results, there is a place for surgery in selected patients. Medical management is then essentially the same as in Graves' disease but higher doses of antithyroid agents may be necessary. Beta-adrenergic blockade is useful, but cautious observation of the patient's cardiovascular status is imperative.

Rare etiologies of thyrotoxicosis, such as struma ovarii or ectopic TSH production by choriocarcinoma, are managed with the same principles of euthyroid maintenance followed by appropriate surgical extirpation, if possible.

Hyperparathyroidism

Hyperparathyroidism, as classically described, is an endocrinopathy associated with hypercalcemia, hypophosphatemia, and increased urinary excretion of both calcium and phosphorus. We shall not deal with secondary hyperparathyroid states although, at times, surgery may be indicated.

Surgery remains the treatment of choice for primary hyperparathyroidism.[8] Prior to surgical exploration of the neck, attempts to rule out other etiologies of hypercalcemia should be made.[9] The mere presence of excessive parathormone, or better said, parathormone levels inappropriately high for a given level of hypercalcemia, does not rule out the possibility of ectopic production by a non-parathyroid neoplasm.[10] Appropriate diagnostic studies usually make the distinction.[11]

Preoperative medical management is concerned with two major facets: 1) the correction of metabolic derangement brought about as a result of the hypercalcemic and hypophosphatemic state and 2) management of the hypercalcemic state, itself. Because of anorexia, nausea, and vomiting; the ADH-resistant diabetes insipidus produced by the tubular effect of hypercalcemia; and a potentially blunted awareness of thirst, hyperparathyroid patients may be dehydrated and sodium depleted. Fluid and electrolyte replenishment must therefore be instituted, with careful assessment of serum electrolytes and the state of hydration. Arterial blood gases are important for initial and follow-up acid-base assessment. Continuous central venous pressure monitoring may be necessary in patients with diminished cardiovascular reserve or altered sensorium. Intravenous saline may not only replenish stores but will have a beneficial hypocalcemic action. Gastric atony should be treated with masogastric suction. In the semiconscious patient, aspiration must be prevented and endotracheal intubation may be in order.

Exogenous magnesium administration may be necessary. Oral phosphate will usually be replenished from dietary sources or may be pharmacologically administered as an effective antihypercalcemic agent. Should fractures result because of excessive bone demineralization, they should be treated in the usual manner. Likewise, renal calculi may either be spontaneously passed or require surgical extirpation. Pancreatitis as a concomitant may present a more complicated clinical picture but will, along with peptic ulcer disease, respond in some measure to conservative medical management. Obviously, the ultimate prevention of these complications will require correction of the metabolic derangement.

The hypercalcemia may be minimal and require merely expectant observation, or it may be severe and necessitate active intervention. Dietary manipulations are essentially of no value. Saline diuresis can be very effective, particularly if used in concert with furosemide. The latter may be given in boluses of 40 to 80 mgm. While intravenous phosphate is exceedingly dangerous and should be reserved for life-threatening hypercalcemia, oral phosphate is an adjunct for serum calcium values greater than 12.0 mgm per 100 cc.[12] It is given in divided doses of 1.0 gram of inorganic phosphate equivalent 2 to 3 times per day. Diarrhea may be a limiting factor in its use.

The above measures should adequately prepare patients for surgery. Depending on circumstances, other modalities, such as intravenous sulfate, citrate, EDTA and calcitonin, may be of value as well. Rather than prolonging management in ill patients, surgical intervention is necessary once a diagnosis is strongly entertained. Good medical management, on the other hand, may provide the medical team with additional time to confirm the diagnosis. Other serologic tests and radiologic procedures may be desirable when diagnostic dilemmas arise or when the patient involved is an extremely poor candidate for operation.

Postoperative management will be largely a function of duration of disease and degree of bone resorption.[13] Patients with widespread bone disease will be at greater risk to hypocalcemia and will require a longer period of mineral replenishment. Further, inadvertent injury to the remaining parathyroid gland(s) or the results of long-term hypercalcemic suppression may render the "normal" gland(s) less acutely responsive. The earliest symptoms of hypocalcemia may be weakness, and distal extremity or perioral tingling. Oral calcium given in doses of 2-4 grams per day with Vitamin D3 in doses of 25,000 to 50,000 Units per day are often necessary. Severe hypocalcemia with tetany may require intravenous calcium administration. (This may be given as slow boluses of one gram of either calcium gluconate or chloride.) Oral calcium and Vitamin D therapy can be gradually tapered over a period of several months. Serum and urinary calcium levels and a diminution in alkaline phosphatase levels are good indices to note.

Cushing's Syndrome

Because of the widespread utilization of corticosteroids, iatrogenic Cushing's syndrome has become a familiar clinical entity. While specific endogenous etiologies of this syndrome continue to be relatively uncommon, experience in dealing with the patient on exogenous glucocorticoids renders us better able to handle the noniatrogenic situations. Metabolic derangements associated with prolonged steroid exposure and long-term adrenal suppression are potential consequences associated with any etiology. Surgery remains the mainstay of therapy in the endogenous diseases.[14]

Well-described techniques, assays, and maneuvers are presently available to determine specific etiology.[15] Increased availability of analytic laboratories and test modifications have rendered such diagnostic work-ups logical and sound.[16] The common denominator of all etiologies is excess glucocorticoid. Before operation is undertaken, correction of secondary sequelae should be attempted. We are all familiar with the generalized myopathy, alterations in fat distribution, easy bruisability, osteoporosis, mental and gastrointestinal abnormalities.[17] While irreversible bone changes cannot be altered preoperatively, cognizance must be taken of the increased propensity to fracture and the patient handled accordingly in the preoperative period. Analogously, the patient with deranged mentation is not an ideal surgical risk. The patient with active peptic ulcer disease should have achieved reasonable stability and should have no evidence of acute gastrointestinal bleeding prior to operation. Despite excessive gluconeogenesis from amino acid substrate, attempts to correct long-standing negative nitrogen balance with adequate nutrition remain prudent and sound.

All patients with glucocorticoid excess have relative glucose intolerance. While not all patients with Cushing's syndrome will be frankly diabetic, those with the genetic predilection are certainly at a higher risk. Concomitant hypokalemia related to mineralocorticoid excess and tissue catabolism can aggravate the diabetic state and produce a nephrogenic polyuria. Clinical diabetes is diagnosed by the usual criteria, and patients should be handled as any other diabetic undergoing surgery. While there is no place for oral hypoglycemic agents, proper diet can be of help. Therapy may be discontinued with correction of the glucose intolerance, although a prolonged postoperative tapering of glucocorticoid may prevent early cessation of insulin.

Hypernatremia and hypokalemia are frequent laboratory manifestations of Cushing's syndrome. They may be of greater severity in certain etiologies (e.g. ectopic ACTH syndromes) than in others. This may be a function not only of excess mineralocorticoid production but of a "cancelling out," by the tumor-mediated cachexia, of physical hallmarks usually associated with Cushing's syndrome. Electrolyte correction is very important and should be done through sodium restriction, potassium supplementation, and the use of mineralocorticoid antagonists such as spironolactone. Diuretics, which may also produce kalureis, are relatively contraindicated. The hypertension of Cushing's syndrome may be ameliorated by these restitutional maneuvers. If not, "first line" antihypertensive agents such as alpha-methyl-DOPA may be useful. Androgen excess does not present a surgical hazard, and the anabolic action of male sex hormones may even have a qualitative anticatabolic effect that counteracts glucocorticoid excess.

The specific etiology is significant from the point of view of operative procedure required and postoperative complications. Certainly, patients with Cushing's syndrome of all etiologies are poor surgical risks. They have an increased bleeding propensity and exhibit poor wound healing. Obviously, a prolonged exploration of both adrenals in the case of suspected true Cushing's disease (bilateral adrenal hyperplasia) is of greater risk to the patient than a simple scalene node biopsy in suspected ACTH production by an oat cell carcinoma. On the other hand, long-term survival is much greater in the former situation. There is a greater propensity for infection and further, infections may be masked and caused by more unusual pathogens. While the physician's index of suspicion for infection must be high, the use of prophylactic antibiotics is to be condemned.

Because there is physiologic dependence to corticosteroids, large doses of glucocorticoids must be given intraoperatively.[18] Just prior to surgery, 50 to 75 mgm of cortisone acetate, intramuscularly, should be given, and 15-18 mgm/hr of hydrocortisone, intravenously, should be administered during surgery. For the remainder of the day, 9-12 mgm/hr of intravenous hydrocortisone is needed. The dose may be gradually tapered over the ensuing several days until a daily oral dose of 50 mgm of cortisone (or its quantitative equivalent in another corticosteroid) is achieved. Intramuscular preparations may be given until the patient can take oral medications.

While the above is applicable to patients surgically cured of glucocorticoid excess, those with persistent postoperative elevations (e.g., adrenal carcinoma) are producing excessive amounts and require therapy to diminish hormonal concentration[19] (e.g., O-p'-DDD). If the patient is adrenalectomized, mineralocorticoid administration such as desoxycorticosterone (2 mgm intramuscularly/day) or as fluorohydrocortisone (.05 to 0.1 mgm, orally/day) should be added. Therapy must continue for several weeks to several months postoperatively to enable pituitary and, subsequently, adrenal restoration. Obviously, the patient iatrogenically rendered Addisonian must always be on full replacement medication. Full restitution may require considerable time, and subsequent acute medical and surgical events must be supported with steroid supplementation.

Summary

Surgery is an important therapeutic modality in the treatment of thyrotoxicosis, hyperparathyroidism and Cushing's syndrome. Knowledge of fundamental pathophysiologic concepts are important and sound medical management imperative to render optimal care during the perioperative period.

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Pancreaticocolic Fistula

Robert P. Carrillo, M.D. and Gerald O. Strauch, M.D.

We have found twenty-two patients with spontaneous rupture and fistulization of pancreatic abscesses or pseudocysts into the colon recorded in English literature to date.[1-13] Nine of them were found at autopsy, and only five were diagnosed before operation or death. Several methods of surgical treatment were successful in ten cases, and the overall mortality rate for the collected series of previously reported patients was 54.5 per cent.

We will present our experience with one case of colonic fistulization secondary to pancreatic abscess, diagnosed prior to operation and successfully treated.

Case Report

A 48-year-old white woman was admitted to Stamford Hospital on February 19, 1974, with a five-month history of abdominal pain, weakness, weight loss of 30 pounds, anorexia, and intermittent nausea and vomiting. Physical examination on admission revealed her to be acutely ill with a temperature of 102 degrees Fahrenheit. The abdomen was distended, and there was a questionable fluctuant mass in the epigastrium. The rest of the examination, except for hypertension of 180/105 mm. Hg, was within normal limits. She gave no significant history of alcohol intake or previous biliary tract disease.

Laboratory studies on admission included a hemoglobin of 9.9 grams per cent; hematocrit of 31 per cent; white blood cell count of 10,500 per cubic millimeter with a differential count of 88 per cent polymorphonuclear neutrophils (36 per cent band forms), 10 per cent lymphocytes, one per cent eosinophiles, and one per cent basophiles. Serum electrolytes revealed evidence of mild metabolic alkalosis. Serum amylase was within normal limits. A glucose tolerance test showed a mild diabetic type of curve.

Chest roentgenogram, intravenous pyelogram, upper gastrointestinal series, and small bowel series were interpreted as normal. An oral cholecystogram revealed non-visualization of the gallbladder.

A barium enema revealed extravasation of contrast material from the proximal transverse colon, which appeared otherwise normal (Figures 1 and 2).

At this point surgical consultation was obtained, and the physical examination revealed fever of 102.2 degrees Fahrenheit, diffuse abdominal muscle guarding, and right-sided abdominal tenderness. No mass was palpable at that time.

The patient's clinical picture was felt to be most consistent with colonic fistulization from a pancreatic pseudocyst or abscess, as a complication of pancreatitis. This conclusion was based on the patient's history, which was consistent with pancreatitis, and study of the barium enema, which suggested that some disease process had violated an otherwise normal colon by digestion of its wall. Repeated serum amylase determinations were normal.

On March 1, 1974, the patient underwent laparotomy at which time the entire retroperitoneum was found to be involved in ligneous inflammatory disease. The pancreas was grossly enlarged and indurated with a rubbery consistency. No peritoneal fluid was present, and the peritoneal surfaces revealed no evidence of acute peritonitis. Loops of small intestine were adherent to the proximal transverse colon and bound there by a severe chronic inflammatory process. During the mobilization of the ascending and right transverse colon an extensive retroperitoneal abscess, containing foul-smelling grayish exudate, was entered. This abscess cavity extended cephalad toward the pancreas. It was then decided to divert the fecal stream from the site of the pancreaticocolic fistula, and a terminal right colostomy plus a loop transverse colostomy distal to the site of the fistula were created. A large sump drain was placed in the most cephalic portion of the abscess cavity, and large Penrose drains were inserted into the subphrenic space. A Stamm gastrostomy completed the procedure.

The patient's postoperative course was uncomplicated. Abundant grayish pus, containing small fragments of necrotic pancreas, drained from the transverse colostomy. The culture taken at the time of operation yielded Enterobacter aerogenes. The patient's nutritional status was maintained with elemental diet feedings through the gastrostomy.

She was discharged four weeks after operation. At that time all drains and the gastrostomy tube had been removed; antibiotic therapy had been discontinued. The right colostomy was functioning well, and she was well nourished.

On August 5th, 1974, the patient was readmitted for elective operation during which a right hemicolectomy, with dismantling of the pancreaticocolic fistula and both colostomies, and end-to-end ileocolostomy were performed. She made an uneventful recovery and was discharged on August 20th, 1974. She has required no further hospitalization and at the time of this writing is in good health.

Discussion

The exact pathogenesis of spontaneous perforation or fistulization of a pancreatic abscess or pseudocyst

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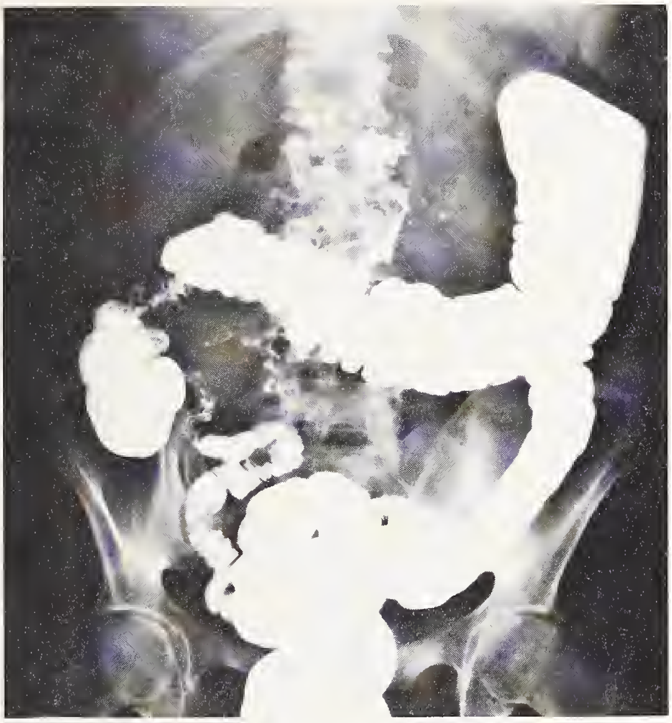

Figure 1
Barium enema showing extravasation of contrast from proximal transverse colon into undefined space. Note otherwise normal colonic contours.

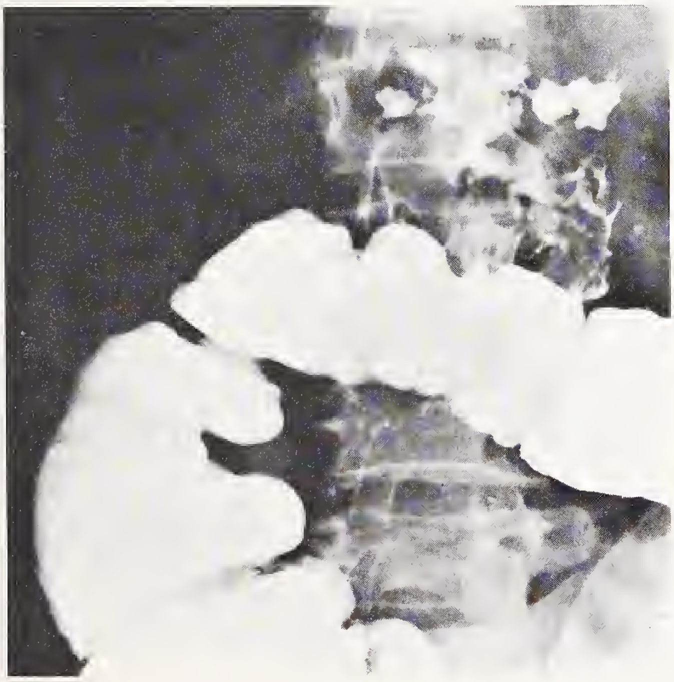

Figure 2
Spot film of area of involved colon. Note lack of evidence of intrinsic colonic disease.

into a hollow viscus is not known, but the following mechanisms have been suggested:

1) progressive digestion of the gut wall by continued pancreatic enzymatic activity;
2) vascular damage by pancreatic enzymatic activity leading to ischemic necrosis of the wall of a hollow viscus;
3) increased intracystic pressure with compromise of the vasculature and ischemic necrosis of the gut wall secondary to pressure.

The symptoms and signs that suggest this condition, in a patient with known or suspected pancreatitis, are: abdominal pain, nausea and vomiting, diarrhea, lower gastrointestinal bleeding, sepsis, or the disappearance of a known abdominal mass. The diagnosis of colonic fistulization can be confirmed by barium enema, which is most helpful in this regard.

The most dangerous site for fistulization of pancreatic collections into the gastrointestinal tract is, by far, the colon since several complications are associated with it. These are:

1) massive bacterial contamination of the retroperitoneum;
2) aerobic and anaerobic bacterial contamination of pancreatic pseudocysts;
3) activation of pancreatic enzymes by enterokinase;
4) septicemia;
5) hemorrhage secondary to erosion of blood vessels.

Once the diagnosis is made, this condition requires surgical intervention because of the previously mentioned complications associated with it.

We regard the minimum treatment to be colostomy proximal to the site of fistula to divert the fecal stream. Subsequent resection of the affected segment of colon with restoration of colonic continuity is likely to be necessary in most instances. It is our opinion that total exclusion of the area of the fistula from the fecal stream proximally and distally is desirable to insure maximum control of contamination and sepsis and to promote most effective drainage through the colonic segment containing the fistula. In addition, we feel that total exclusion of the affected colonic segment will tend to discourage secondary hemorrhage.

We also believe that a gastrostomy for upper gastrointestinal decompression and for possible later feeding should be considered in this type of case which may require aggressive nutritional support. Elemental diets may greatly benefit patients in such circumstances and are very effectively administered by the gastrostomy route.

A summary of previously reported pancreaticocolic fistulas in English literature is presented in the Table. Although the overall mortality in the series has been high, an increased awareness of this complication of pancreatitis and the more sophisticated diagnostic methods and surgical management now available should lead to more expeditious diagnosis and substantial reduction in mortality in the future.

Table I

COLLECTIVE REVIEW OF PREVIOUSLY REPORTED PANCREATICOCOLIC FISTULAS

Author	*Fistulized Hollow Viscera*	*Preoperative Diagnosis*	*Surgical Treatment*	*Survival*
1. Morton[1]	Colon	No	None	No
2. Case Records of MGH*[2]	Colon, duodenum	No	None	No
3. Case Record of MGH*[2]	Colon	No	None	No
4. Gatch et al.[3]	Colon	No	Drainage	Yes
5. Gatch et al.[3]	Colon	Yes	Drainage, primary closure of fistula	No
6. Gatch et al.[3]	Colon	No	None	No
7. Bockus et al.[4]	Colon	No	Drainage	Yes
8. Cattell et al.[5]	Colon	No	Primary closure	Yes
9. Breitenecker[6]	Colon	No	None	No
10. Howard et al.[7]	Colon	No	None	No
11. Howard et al.[7]	Colon	No	Unreported procedure	Yes
12. Grimoul[8]	Colon	No	Drainage	Yes
13. Lerner et al.[9]	Colon, stomach	Yes	Partial gastric and colonic resection	Yes
14. Goldin et al.[10]	Colon	Yes	Drainage, diverting colostomy	Yes
15. Berne et al.[11]	Colon, stomach, small bowel	No	None	No
16. Berne et al.[11]	Colon	No	Resection and end-to-end anastomosis	No
17. Berne et al.[11]	Colon	No	None	No
18. Berne et al.[11]	Colon, peritoneal cavity	No	Drainage	No
19. Shatney et al.[12]	Colon, duodenum	Yes	Drainage, diverting colostomy	Yes
20. Mason et al.[13]	Colon	Yes	Drainage, diverting colostomy	Yes
21. Mason et al.[13]	Colon, duodenum	No	None	No
22. Mason et al.[13]	Colon, duodenum	No	Drainage, diverting colostomy	Yes

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Should We Attempt to Salvage the Injured Spleen?

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The pendulum swings in medical thought are fascinating to study. They may occur over short periods of time or over decades or even over centuries. By and large, the causes for these shifts in point of view relative to a given problem area involve advances or, at least, changes in knowledge of the subject in question. Sometimes the impetus for a change in consensus regarding a problem may be traced to thinking with precious little but conjecture or anecdotal history as a base. While real medical breakthroughs are possible in this setting, the attempt to prove the point may also result in lost or impaired lives. It therefore behooves those who set about effecting major changes in the approach to important medical problems to exercise considerable responsibility in so doing lest, in this age of instant communication and of soft data, the pendulum becomes an uncontrolled shillelagh.

Splenic injury is the most common injury sustained in major blunt abdominal trauma.[1] In a recent statewide study of Connecticut,[2] the spleen was injured in half (114) of 229 patients sustaining major blunt abdominal injuries, while the second most commonly injured organ was the liver, with 50 patients involved.[3]

Ever since emergency abdominal operations became reasonably safe, total splenectomy has been the treatment for splenic injury advocated by those concerned with caring for the injured. This stance became very firm in surgical literature and teaching about 40 years ago[4] and, until very recently, has gone virtually unchallenged among either civilian or military surgeons.

In the last five years a rash of papers has appeared questioning the need or advisability for total splenectomy in splenic injury under various circumstances.[4-9] Much of this literature has concerned splenic injury in children.[6-8]

It seems appropriate at this time to examine both the reasons why total splenectomy for splenic trauma is generally supported at present, as well as those reasons why questions as to the validity of total splenectomy following splenic injury have arisen. It should be possible, hopefully, to arrive at a posture which is cognizant of continuing refinements in our knowledge of splenic trauma and splenectomy, and safe for patients with injured spleens.

The Traditional View

The basis for the traditional view, which regards total splenectomy as the treatment of choice for all patients with splenic injury, concerns two facets: the safety of total splenectomy and the risks of alternatives.

While anecdotes are present in old literature attesting to survival of victims of splenic injury without operation, with partial splenectomy, and with splenic repair,[4] [5] the data on larger numbers of patients bore testimony to high mortality rates from splenic hemorrhage which decreased when total splenectomy became the operation of choice.[5]

The immediate mortality risk of splenectomy when isolated splenic injury is incurred is very low (less than two per cent) if diagnosis and splenectomy are prompt; and complications are uncommon. High mortality and morbidity rates reported in patients with splenic injuries can almost invariably be related to 1) associated injuries, 2) delay or failure in diagnosis, or 3) in the case of splenic injury as an operative accident, extension of a major operation. Among 124 patients who underwent splenectomy for splenic injury in Connecticut in 1971, none died when splenic rupture was the sole surgical problem.[10] Among 34 children with splenic injuries, none died, regardless of other clinical parameters.[11] The overall mortality for patients with injured spleens was seven per cent.[2]

About one person in seven with splenic injury, has in the past, failed to have a diagnosis established until delayed splenic hemorrhage has occurred.[12] The risk of such delayed hemorrhage is present for at least months and possibly years following splenic injury. The patient with an injured spleen therefore lives in jeopardy of dying of hemorrhage or at least of requiring operation because of hemorrhage or other complication, such as splenic pseudocyst, for an indeterminate period of time after injury.[13] A further potential problem is splenosis, autotransplantation of the spleen.[14]

Splenic repair and partial splenectomy are basically unproved operations in the context of today's surgical experience.

Splenectomy for splenic trauma has led to but very rare recognized late complications.[15] In all but exceptional cases in the very young,[16] splenectomy for injury to the spleen has apparently affected quantity or quality of life but little.

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The Traditional View Challenged

The puzzle of splenic function remains incompletely elucidated, but it has become clear that the spleen may play an immunologic role, especially in the very young.[8] As understanding of immunology has developed, questions have arisen as to the possible deleterious effects of splenectomy in children[17 18] and even in older individuals.[4]

Further, accidental injury to the spleen during abdominal operations has become frequent enough to be considered a problem worthy of some study,[9 19 20] and the increase in morbidity associated with splenectomy under this type of circumstance has generated interest in salvaging the spleen, when intraoperative splenic tears have occurred.

Studies of splenic vasculature in lower animals have shown that partial splenectomy is possible without high mortality rates or great danger of early or late hemorrhage.[6] Subtotal splenectomy has been performed for splenic injury in humans as well.[4] A number of patients have undergone partial splenectomy combined with transdiaphragmatic splenic transposition to control portal hypertension and associated bleeding from esophageal varices.[22]

Splenic injuries repaired by various means have been reported in the past. Currently, Morgenstern has perhaps been the most persistent investigator in searching for a reliable method for splenic repair, and he regards the use of micro-crystalline collagen[23] as the most promising technic to date. Because suture of the spleen has been unreliable for controlling hemorrhage from splenic tears, a number of materials have been employed to plug, patch, or plaster sites of splenic damage. These include absorbable gelatin sponge with or without thrombin,[24] charged gold leaf,[25] oxidized regenerated cellulose,[9] cyanoacrylate monomers,[25] and collagen sponge.[25] Omental patching has been suggested.[4] The attractiveness of microcrystalline collagen lies in "its ability to adhere to wet surfaces even in the presence of active bleeding, its pliability in the face of motion or manipulation, and its resistance to breakthrough bleeding."[9] It is applied in small quantities picked up with tissue forceps and applied directly to the bleeding surface. Hemostasis is achieved by trapping of platelets and prompt fibrin deposition within the interstices of the collagen substance.

The incidence of splenic hemorrhage requiring operative intervention following percutaneous needle puncture for splenoportography has been low.[26]

Methods for establishing the diagnosis of splenic injury from blunt or penetrating abdominal trauma have become available in recent years. The splenic scan[27] and splenic arteriography[28] have demonstrated their usefulness in this regard. In addition, ultrasonography[29] has added another dimension to the diagnosis of splenic trauma by providing the means for monitoring splenic hematomas using a minimally invasive method. With these modalities, the clinician is able to pursue nonoperative management with considerable precision.

Spontaneous healing of ruptured spleens has been encountered, even when the clinical diagnosis of splenic injury has been apparent.[4]

Splenosis is a rare condition and, even if present, is not of itself dangerous unless associated adhesions cause intestinal obstruction.[30]

Finally, data available regarding the delayed splenic hemorrhage shows that in many reported cases, hemorrhage seems to be a noncatastrophic process, and patients appear to present as problems in diagnosis rather than in salvage of life.[31 32]

For all these reasons, some investigators have felt that splenic salvage might be desirable and feasible following splenic injury.

Rebuttal to the Challenge

In examining the problem of the immunologic consequences of splenectomy (or, more properly, loss of splenic function), it has been difficult to indict removal of an injured spleen from an otherwise healthy patient as a source of immunologic difficulty except in infants. Even infants show no uniformly increased susceptibility to infection, the problem which has been of most serious clinical concern.[10] The difficulties with infection and other life-threatening sequelae of splenectomy in children have occurred, in the great majority of instances, among children with serious systemic diseases to which splenectomy was related.[10] To date, the immunologic rationale for avoiding total splenectomy for splenic injury is supported by few data.

Reports of repair or partial removal of injured spleens must be considered anecdotal at this time. The same must be said for nonoperative management of splenic injury.

It would be very useful to have a method for repairing small splenic injuries so reliable that no concern for hemorrhage or other complications following such repair were necessary. This is especially true 1) for infants, 2) for patients with multiple injuries, and 3) for patients in whom splenic injury is a surgical accident. In the first instance, the danger of postsplenectomy septicemia could be obviated. In the second, operating time could be shortened and the patient spared a further major operative procedure. In the third, the increased morbidity of splenectomy under such circumstances would presumably be eliminated, as would some embarrassment or perhaps litigation for the surgeon. Unfortunately, the development of such a method requires experience with human patients, and it seems very difficult to encourage this experience when splenectomy for splenic injury is accepted and effective in most instances and when the price of failure of less than splenectomy is potentially disastrous. Who could condone the death of a child from massive, delayed splenic hemorrhage, during the night, at home, six weeks after repair of his spleen? In this context, we know of one patient in our own community in recent years who died in the hospital from delayed, sudden, massive hemorrhage from a previously undiagnosed splenic injury; we therefore cannot regard delayed hemorrhage from the spleen lightly, though accurate data on such lethal instances are hard to come by. Delayed splenic rupture has been reported as associated with a tenfold increase in mortality over prompt postinjury splenectomy in the past.[33]

The same comments are applicable to the nonoperative management of splenic injury, and here there perforce must be substantially less accurate assessment of splenic injury than when the spleen is visualized at operation. In addition, no hemostatic measures whatever are possible, and associated abdominal injuries cannot be evaluated. (The possibility of use of the laparoscope to obviate total nonvisualization of the abdominal cavity has little appeal, since acceptable examination of the traumatized abdomen by laparoscopy is impossible by today's standards, and since the limited examination one might obtain would probably be of value but rarely.)

Splenic puncture for splenoportography was a common procedure prior to development of modern angiographic technics. It was undertaken, with a calculated risk, to provide vital information in patients with life-threatening problems involving the portal venous system. Because of the potential complications of percutaneous splenoportography, chiefly splenic hemorrhage, it has been largely replaced by venous-phase splanchnic angiography.[34] It should also be said that the spleen in the patient with portal hypertension is ordinarily not a normal spleen, as is the spleen ususally involved in traumatic injuries, but a firm, fibrous, enlarged spleen with a thickened capsule, which may be less prone to bleed.

Conclusion

Total splenectomy must continue to be considered the standard treatment for splenic injury at this time. Other approaches currently must be regarded as adventurous, although several alternatives have been reported as herein discussed. The limiting factor in altering the current status of operative therapy in splenic injury is lack of adequate data regarding the safety of such alternatives as splenic repair, partial splenectomy, and nonoperative management. If these methods somehow are shown in convincing fashion to be safe, they will doubtless find their greatest usefulness in patients with splenic injury who are infants, who have minimal splenic injuries, or whose spleens have been accidentally injured during operation.

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Tumor Immunology

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One of the most active, and confusing, fields in medical science is tumor immunology. The purpose of this article is to describe some of the principles of tumor immunology and to provide some idea of the directions which tumor immunology and immunotherapy are taking. The first point to be made is one that is implicit in this whole discussion: that tumors are antigenic, that the nature of their cell membrane is different from that of normal host cells. This point seems obvious to us now, but, as little as 20 years ago, it was not at all accepted that there were tumor antigens that were different from tissue antigens. There had been suggestions even as early as the turn of the century that tumors were antigenically different, but because of a great deal of vociferous criticism, often not based solidly on fact, many of the older experiments were simply dismissed. Prehn and Main in the late 1950's showed that pretreatment of an inbred mouse with irradiated (killed) methylcholanthrene-induced tumor cells could protect the mouse against challenge with the same tumor cells. Immunization with normal tissue would not protect it. The tumor was one that ordinarily would "take," grow, and kill the animal in a short time. By pre-immunization, then, Prehn and Main showed that there were antigens unique to the tumor. There have since been a variety of similar demonstrations that tumors in rodents are antigenic even in susceptible hosts. Specific demonstrations of neoantigens on tumors with immunofluorescence techniques, and cytotoxicity tests *in vitro* have recently been possible. There is now conclusive evidence with a variety of technics that there are also neoantigens on tumors in man. Occasionally deletions of antigens occur, but even then the tumor cell is *different* from the host cell, having a different configuration at the cell surface.

In virus-induced tumors there are antigens common to all tumors, characteristic of the particular virus regardless of the strain or even the species of the host. The antigen is induced by the virus and is not viral protein. Thus Moloney sarcoma in mouse and rat share a common antigenicity despite other dissimilarities. In contrast, tumors induced by a carcinogen such as methylcholanthrene or benzpyrene have antigens that seem to be unique to each other. This lack of common antigenicity sometimes is noted even among different carcinogen-induced tumors within the same animal. Despite this obvious very large difference in antigenicity, some have proposed carcinogens act by releasing a latent virus from control, allowing it to express itself. While the differences in patterns of antigenicity of tumors

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induced by viruses and carcinogens are a major stumbling block to a unified theory of the cause of cancer, it is entirely possible that this problem will be overcome as we understand more about the situation. Many carcinogens are immunosuppressive agents, which could conceivably allow the expression of a latent virus. We will return to the relation of immunosuppression to carcinogenesis shortly.

The particular antigens that are expressed may actually be embryonic antigens, not neoantigens that have arisen, *de novo*, in a tumor. Many tumor antigens are present during embryonic development but are suppressed in normal adult cells. They are expressed only when some event causes the tissue to become tumorous. These are the "carcinofetal" antigens described within the past few years. One such antigen is "carcinoembryonic antigen" (CEA), which seems to be common to all the adenocarcinomas of the gastrointestinal tract, and is also found in embryonic gut and related epithelial tissues. If one induces an antibody in a rabbit to a human gastrointestinal tumor, and then removes any antibodies against normal colon tissue, there still remains in that rabbit serum antibodies to specific antigens found only in the tumor. This antiserum may be used to identify carcinoembryonic antigen, which circulates in the blood. Unfortunately, CEA has not turned out to be as specific as was thought at first; lung, breast, and bladder tumors also release CEA. Since CEA is released into the circulation, it was hoped that it would provide a possible diagnostic test for cancer, but it now appears that it is not so sensitive as required for a diagnostic test, particularly for small tumors. The value of CEA seems to be as a measure of response to tumoricidal therapy. Patients with wide-spread disease have high levels of serum CEA, which decreases after successful surgery or chemotherapy. Another carcinofetal substance is alpha-fetoprotein, a fetal protein produced by hepatoma cells and some testicular tumors. Levels of alpha-fetoprotein may be helpful in diagnosis and monitoring response, but have a more specific (and more restricted) clinical application than CEA.

If a tumor is antigenic why is it not rejected by the host? As we have noted, the fact that tumors were not rejected was regarded as *prima facie* evidence for nonantigenicity. Yet there are other explanations. One is that the host may be immunologically incompetent, permanently or temporarily, at the time the tumor develops. The host may not recognize it as being antigenic, or lacks the immune capacity to reject it. This brings up the basic question of what it is that allows normal individuals to recognize the "foreignness" of tumor cells. One proposed explanation is the concept of immunological surveillance. The concept of surveillance has been put forth in a variety of ways, most recently by Thomas and Burnet. This states that there is a mechanism, probably mediated by circulating lymphoid cells, whereby a host can recognize the antigenicity of the tumor cells and destroy those cells, which are presumably arising by mutational events all the time. A successful tumor mass is thus seen as the mutant cells that escape surveillance, such as when there is a defect in the surveillance system. Surveillance may be by some kind of cell-to-cell contactual inhibition, or it could be a more specific immune rejection by lymphocytes. There is evidence that the thymus-derived small lymphocyte (abbreviated "T-lymphocyte" or "T-cell") is probably the cell involved in surveillance. The best evidence for surveillance by T-cells is that in the absence of T-cells there is a high incidence of tumors. For example, if one thymectomizes a rat or a hamster or thymectomizes and irradiates a mouse, ablating T-lymphocytes, it is easier to induce tumors. The incidence of some spontaneous tumors also increases. If antilymphocyte serum is administered to suppress T-cells selectively, virus-induced tumors normally rejected by adult animals can be elicited, but there is no evidence that spontaneous tumors are increased. There are some strong examples of the breakdown of surveillance in what Good calls "experiments of nature"—in the Wiskott-Aldrich syndrome, a thymus deficiency state with thrombocytopenia and dermatological manifestations in children, and in the ataxia telangiectasia syndrome, also a thymus deprivation state. In both of these conditions the thymus is aplastic at autopsy. The affected children are prone to a variety of different maladies throughout their life but tend to die of malignancy. Fully 10% of children with ataxia telangiectasia (10% of 420 reported cases) have died of malignancies and in Wiskott-Aldrich syndrome it is even higher: 13 out of 100 cases. This is an enormous increase over the expected incidence of malignancy in this age group of children, and the common denominator seems to be the absence of thymus and, therefore, the absence of thymus-dependent small lymphocytes. Another very strong bit of evidence comes from experience with renal transplant recipients, in whom there is a 6-10% incidence of tumors after iatrogenic long-term continuous immunosuppression. The median age for patients with renal transplants is approximately 28 years old, and yet they are dying of malignancies far out of proportion to the incidence expected in their age group, which is approximately 0.06%. One very interesting fact is that not all malignancies are lymphoid. There is a high incidence of reticulum cell sarcomas and other lymphomas, but more than half of all tumors are non-lymphoid. They are tumors of epithelial origin involving the skin, as well as the ovary, the stomach and other viscera. This is strong evidence for a defect in a general surveillance mechanism for tumors rather than simply a concomitant suppression and "bombardment" of the lymphoid system by renal antigens causing the lymphoid system to go awry. One would not expect other tissues to be involved with malignancy unless a lymphoid surveillance mechanism was compromised.

There are other suggestions of immunoincompetence predisposing to tumors. Patients with Hodgkin's disease, in which T-lymphocytes are functionally deficient, have a high incidence of second tumors. Furthermore, aged people are relatively less immunocompetent than young people, particularly with regard to T-cell mediated immunity, and by and large, cancer is a disease of older people. The ability to be sensitized to new antigens, such as dinitrochlorobenzene, is decreased in older people. More than 95% of individuals who are under 65 can be sensitized to dinitrochlorobenzene, but only about 20-30% can be sensitized over the age of 65. This too is only circumstantial evidence, but all of these examples suggest that a surveillance mechanism is important and that a breakdown of surveillance may be responsible for the occurrence of malignancy.

There are other reasons why an antigenic malignancy could flourish. For example, the host might be immunologically tolerant to the antigens of the tumor or the inducing virus. Tolerance means that the host cannot respond because he does not see the antigen as "non-self." Experimentally, one can introduce an antigen in early fetal life when the host has not yet developed immunocompetence, so that when he becomes competent he finds this antigen in his own tissues and never recognizes it as foreign. Polyoma virus in rodents or avian leukosis in chickens, introduced into an incompetent animal will elicit tumors, whereas introduction of the same virus into a competent adult animal will lead to prompt rejection of the virus. Human leukemia may be a disease that is transmitted vertically from mother to fetus, which may remain in that immunologically incompetent fetus, be accepted as "self" when the fetus later becomes competent, and be expressed only years later. An external event may be required to release the virus, accounting for the peak incidence at 4-6 years of age.

It is also very possible that an antigenic tumor might grow so fast that it outstrips the host's ability to keep up with it. There are data in animals that induced tumors that arise after a short latency are invariably those with a strong antigenicity. One would expect that a highly antigenic tumor with a slow rate of growth would be rejected, and conversely it is reasonable that those with strong antigenicity *must* be those that grow too rapidly for the host's immunity.

All of these explanations have dealt with the induction of a tumor: how it might arise and begin to grow. There is another phenomenon which may help to explain why when a tumor, once initiated, continues to grow in a host. This is the so-called "enhancement" phenomenon. Enhancement refers to enhanced growth of a tumor, but the phenomenon is also applicable to transplants where growth is not accelerated but there is protection of the graft from destruction. Sometimes pretreatment with killed tumor cells paradoxically makes the host more susceptible to challenge with viable cells of the same tumor. Antibodies generated in the host protect the tumor from destruction by T-lymphocytes and macrophages. This does not mean that antibody coats tumor cells. In fact, there is a great deal of evidence to suggest that the way that a tumor is protected from destruction by a T-lymphocyte or a macrophage by antibody is by a feedback inhibition of the macrophage and the lymphocyte. Antibody acting with antigen provides a negative signal to those host cells. The most damning evidence against the simplistic concept of "covering" of tumor antigens is the fact that microliter quantities of antibody are very effective in enhancement, amounts that are clearly insufficient to cover all possible antigenic sites on the tumor. Enhancement of rodent tumors has been known for years, and has recently been found applicable to human beings by the Hellstroms. They have discovered a "blocking" factor in serum, which antagonizes lymphocyte-mediated cytotoxicity *in vitro*. Blocking factor also appears to be an antigen-antibody complex. Patients with progressive tumors often have serum blocking factor, but patients with localized tumors do not. A disputed point is whether the blocking factor is the cause of metastasis or rapid growth, or is the consequence of a large tumor burden. There is considerable evidence to suggest that large, bulky or widely metastatic tumors shed antigen. The tumor itself thus generates blocking factor not only by eliciting more blocking antibody but by increasing the input of blocking antigen into the complex. While it is not established that there is a causal relationship between blocking factor and progressive growth in man, as in animals, there is now a human counterpart of enhancement susceptible to further close scrutiny.

We have considered serum factors, consisting in part of antibodies, that block effective immunity to tumors. But not all host antibodies are harmful. There are cytotoxic antibodies that kill tumor cells in the presence of complement, *in vitro*. These have been demonstrated most usually in murine leukemias, and may be present in man. They have also been found in patients with localized melanoma, but appear to be absent in disseminated melanoma. There is another kind of beneficial antibody called "cytophilic antibody," which arms macrophages and enables them to recognize, attach and ultimately kill a tumor cell. Besides the T-cell mediated system, there is a macrophage-mediated immunity in part controlled by T-lymphocytes but also involving the product of a non-thymus dependent ("bursal dependent," (B)) lymphocyte, namely antibody. Attachment presumably occurs at the Fc end of the antibody, with the Fab portions at the other end of the molecule free to recognize and attach to antigens. In the mouse, macrophages armed with cytophilic antibodies are extremely important in the rejection of ascites leukemias. The role of macrophages in the (potential) rejection of tumors in man has not been defined, but cytophilic antibodies have recently been found in the serum of patients with leukemia and melanoma. This suggests a similarly important role of macrophages in human beings. A related antibody is one that facilitates cytotoxicity of tumor cells mediated by lymphocytes. This antibody seems to be another variety of cytophilic antibody arming unsensitized lymphocytes rather than macrophages.

It is obvious that to be efficient chemotherapy must act in concert with host defenses. When we have measured tumor-associated immunity in patients with melanoma and ovarian carcinoma receiving chemotherapy, many patients have had either no decrease in cell-mediated immunity against their tumor, or only a transient decrease with rapid recovery. Blocking factor has often been absent during drug-induced remission, which can be viewed as a beneficial effect of chemotherapy on host immunity. Thus some agents and schedules of chemotherapy may not be antagonistic towards the host's defenses despite their potential for immunosuppression.

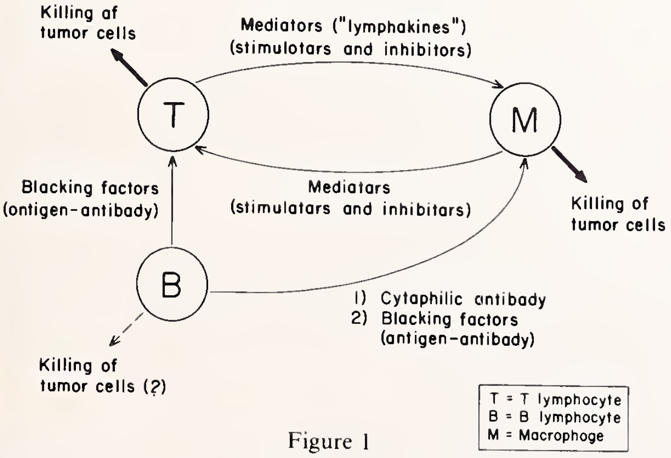
Killing of tumor cells
Mediators ("lymphokines") (stimulators and inhibitors)
T
M
Blocking factors (antigen-antibody)
Mediators (stimulators and inhibitors)
Killing of tumor cells
B
1) Cytophilic antibody
2) Blocking factors (antigen-antibody)
Killing of tumor cells (?)
T = T lymphocyte
B = B lymphocyte
M = Macrophage

Figure 1

Interaction of lymphocytes and macrophages in tumor destruction.

The diagram in Figure 1 schematizes the interaction of three principal cells involved in the destruction of a tumor. The T-lymphocyte controls macrophage function by such things as "lymphokines": mediators from T-lymphocytes that activate macrophages non-specifically. The macrophage on the other hand can make mediators, such as the substance called "lymphocyte activating factor" (LAF), that can activate T-cells, so that there is bidirectional interaction between lymphocytes and macrophages. There are also inhibitors produced by each type of cell that permit regulation of the function of the other, not simply activation. An activated macrophage can kill tumor cells, which may be the principal mechanism of destruction of tumors *in vivo*. In the killing process non-specific activation may be complemented by specific arming by cytophilic antibodies from B cells. It is worth emphasizing that although most killing demonstrated *in vitro* has been directly by T-lymphocytes, in the *in vivo* lesions of delayed sensitivity only 10% of the cells are lymphocytes and 90% are macrophages, suggesting that macrophages are the major effector cells. B lymphocytes, besides making "arming" and cytotoxic antibodies, make immunoglobulins which in combination with tumor antigens constitute blocking factors antagonizing tumoricidal effects of lymphocytes and macrophages.

If the host has an immune response with at least the potential for overcoming tumors, what can we do to stimulate or supplement that immune response to enable destruction of tumor cells remaining after therapy? This is the challenge for immunotherapy, which will be discussed in the next article.*

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*This article entitled "Immunotherapy of Solid Tumors" will appear in the October issue of *Connecticut Medicine*.

Reflections from the Dean's Office

Robert U. Massey, M.D.

Potential energy in universities is at its highest level in September and tends inexorably to run downhill during the subsequent nine or ten months. For faculty and students September is the early morning cortisol peak, and although the encounters of the day may excite both to great exertions, the morning freshness fades quickly.

At no time of the year is the enterprise seen more clearly, or the descriptions of the vision more lucid. New students and new teachers bring fresh views—or rather in September's light they seem to. Faculty are prepared to undertake the old tasks with new vigor and to plan novel enterprises, design new programs, and remodel old ones.

Schools of medicine are caught up in this academic rhythm, although the arrival of new house officers in July is a mildly perturbing event. Useful change energy had best be tapped in the fall; even then, little can be expected for another year.

For the past fifteen years, medical education and medical practice have been involved in uncountable new programs, developed as disjointed responses to the social revolution through which we have recently passed. Some of these programs seem now to be firmly in place and are considered traditional, such as Medicare and Medicaid; others which emerged during the Great Society are now moribund, such as Regional Medical Programs. Some have struggled so long for a viable form that history may record them as past ideas which barely had a present existence, such as health maintenance organizations. There are parallels in medical education.

The social revolution has waned and a mood of political and economic conservatism is palpably present everywhere. It is the mood of reaction, part of a larger cycle superimposed on the seasonal one. It is a subtractive time.

It is within narrower channels of fiscal restraint and conservative optimism that the creative energies of the new academic year will be confined. Legislators will sense similar restraints, and planners may even admit to them. Excellence in artistic or scholarly creativity is not easy to define acceptably; it seems always and essentially, however, to include restraint. The paradoxical requirement of discipline for freedom has to be rediscovered by society after each carnival.

A useful distinction to keep in mind as we contemplate new and examine old programs may be that which exists between workability and usefulness. There is a tendency to regard effective programs, ones which can be carried out, as beneficial programs; and effective programs yielding little social benefit "may rather quickly pass through a process of 'social validation' and acquire a life of their own, divorced from empirical validation or refutation."[1]

Franklyn N. Arnhoff in a recent article in *Science,* "Social Consequences of Policy Toward Mental Illness," emphasizes the need to distinguish programs which are effective in attaining their internally stated goals from programs which are socially or otherwise beneficial. He further describes the paradox with which we are all familiar, in which health policies are made as a result of "beliefs and attitudes which at their best, represent uncritical clinical judgments but certainly not systematic explorations of specific contexts of treatment for special types of conditions."[1]

Program effectiveness and program benefit are concepts of judgment which can be applied to medical education as well as to new schemes for providing, distributing, or financing health care. It is difficult to measure the benefits of an educational program change; it is easier to ask whether it is working or not, and if it is, to continue it until it acquires "social validation."[1] Then it is safe from ordinary critics and may even escape the budget office. How can the benefit be measured? This question serves as well both the defense and the attack. History might provide the control but history was not consulted in time, and anyway there are too many variables. Changes in education and changes in health policy are made too often for political reasons, generally in a mood of official altruism. Clinical judgment is rarely involved, even by the clinicians themselves.

The energies of September and the restraints of the times provide the ingredients for artistic remodeling and gentle disposing in restrained good taste, and for the application of knowledge and the scientific method to the judgments which we must make.

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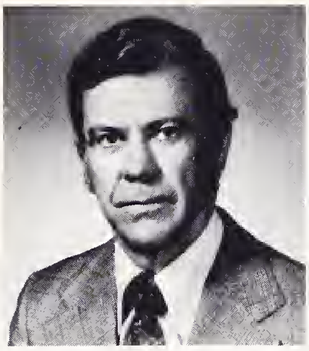
[1] Arnhoff, Franklyn N.: Social Consequences of Policy Toward Mental Illness, *Science,* June 27, 1975, Volume 188, No. 4195, pages 1277-1281.

The President's Page



KEEP IT LOCAL. Just as a centralized bureaucracy in Washington will never be able to keep our streets safe, collect our garbage, or guarantee us clean air to breath, so the Secretary of HEW will never solve the problem of providing readily accessible, high quality medical care at the local level.

The advent of impending substantial intervention of the federal government in health must be viewed as a potential disaster. Both the past and present amply document the seemingly inevitable cycle of poorly designed government regulations and directives leading to .increasing complexities, confusion, incomprehensibility, and ultimately to citizen contempt and cynicism.

How do we alter the foregoing script and prevent the depersonalization that centralization and bureaucratization inevitably cause? How do we preserve the dignity and individualism of our citizens in such a system? Finally, how do we preserve a system which, for all its scientific accomplishments, is still best appreciated for its humanistic qualities of intimate and personalized caring?

We must provide a forceful alternative to the forthcoming "bureaucratic crunch" by creating a credible and viable alliance between physicians, hospitals, private carriers, and the public. A consensus on goals could be reached rapidly. Agreement, not only to provide easily accessible quality care at reasonable cost, but on goals such as catastrophic illness protection, pluralistic yet administratively easy methods of financing and delivering care, systems responsive to changes and advances in both science and management, and programs acceptable to both the public and health care professionals, should be easy. None of these should present any problem if we accept the philosophy that the system should serve the public and not vice versa.

Making the relevant reforms may not be so easy. Individuals must accept the fact that they have the primary responsibility for maintaining their own well being. Now that infectious epidemics of the past have largely disappeared, disease appears to be increasingly related to a way of life. No one can legislate good health and no one can bestow good health on another. The public has a responsibility to assume a life style conducive to longevity and make intelligent use of available health services and facilities.

The private carriers must be willing to assume the medical insurance coverage for up to eighty percent of the nation while the federal government assumes the responsibility for the aged and the poor. Meaningful reform would suggest seeking appropriate mergers between Blue Cross and Blue Shield organizations, improving benefits for ambulatory coverage, and ruthlessly eliminating inefficient carriers.

Hospitals must strengthen their own internal management and cost control systems and be willing to eliminate inefficient units and merge others. Too often the hospitals appear to have abandoned their leadership role in their struggle for day to day survival and their continuing internal, internecine power struggles.

Finally, the physicians must accept the responsibility of providing an appropriate quantity and quality of doctors to meet the legitimate needs of the nation. That is—enough physicians to provide the whole spectrum of services—not only diagnosis and treatment, but prevention, rehabilitation, and custodial care as well.

Implicit in the new planning bill, P.L. 93-641 is the transfer of control of the health industry from the providers to the consumers. Also, there is the additional threat that, if all the goals and priorities are to be accomplished, it follows inevitably that there must be total governmental control of the industry.

Only this consortium, operating at the local level, with its shared multigroup responsibility and public accountability, has the potential to prevent this outcome and thus avoid public alienation with yet another of our vital institutions.

Guy W. Van Syckle, M.D.
President

"For when was honey ever made with one bee in the hive"...

Thomas Hood, *The Last Man*

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Connecticut Medicine

Editorials

Surgical Learning in Community Hospitals—1975

Those who have been engaged in educational programs in community hospitals are witnessing today a remarkable phenomenon—virtually a tidal wave of interest in learning by community physicians. Whereas in the very recent past, even in community hospitals with residency programs, the "physician educator" has sometimes been regarded as eccentric, inappropriate, or even threatening by many of his colleagues, there is quite suddenly a great deal of respectability in knowing something about the learning process. This phenomenon has been at least as apparent in surgery as it has in other major clinical areas.

Let no one be deluded. This new interest in learning is not some kind of inexplicable renaissance miracle, some cosmic activation of previously slumbering professional awareness. It is the response of the survival instincts of alert, practical, and smart people to a barrage of stimuli demanding either evidence of interest in continuing education and competence or, as a consequence of a lack of such evidence, professional degradation. Accountability is now also a surgical problem, and one for all surgeons on an ongoing basis. Consumerism, the Study on Surgical Services for the United States (SOSSUS), the Joint Commission on Accreditation of Hospitals (JCAH), Professional Standards Review Organization (PSRO) legislation, the American Hospital Association (AHA) through its Quality Assessment Program (QAP), third party payers, the malpractice debacle, and, yes, even Watergate, have all had their identifiable impacts relative to learning for the community surgeon. The Surgical Education and Self-Assessment Program (SESAP) of the American College of Surgeons and the recent decision of the American Board of Surgery to require recertification in the future for its new diplomates are very visible responses to a demand for measurable and continuing expertise among surgical practitioners.

It seems obvious that the process of continuing education for the surgeon will cease to be just an ideal espoused by surgical educators and practiced by an unknown fraction of the surgical community. Consideration of the end of the residency as the termination of the community surgeon's academic activity should become obsolescent. The obvious thrust of all the interest in learning and education by those outside the profession has to do with quality and cost-effectiveness of surgical patient care. Will continuing education of community surgeons contribute to optimal quality and economy in the care of surgical patients in community hospitals? Certainly one would hope so, but knowledge and skill are not necessarily accompanied by dedication, although the former frequently imply the latter, and vice versa.

Another current phenomenon in surgical learning in community hospitals might be called the "residency crisis." (After a number of years of preparation and warning, the disapproval of surgical residency training in many community hospitals seems to be under way.) It is quite apparent that free-standing community hospital surgical residency programs, that is, those without strong medical school affiliations, will soon become extinct. It would appear that survival of a community hospital residency in the immediate future will require, in addition to the absolute sine qua non of meaningful medical school affiliation, 1) a full-time director, 2) demonstrable ability to attract American trainees, 3) clear evidence that resident learning (as opposed to resident service) is the focus of the program, and 4) regular documentation of specialty board certification by graduates of the program. Not all of these requirements are, at present, part of the written policy of residency approval bodies, but they seem nonetheless obvious. Nor it is difficult to defend them. Those community hospitals in which the issue of the future of the surgical residency still exists must decide at the earliest possible moment whether they can and should meet these requirements. The decision is not easy.

Stamford Hospital surgeons have found themselves very much involved in the issues touched upon here, and we cannot claim to have solved them. I regard our successes, frustrations, debates, and uncertainties as anything but unique. We are trying to learn from others, since our problems are common to others. We hope that our progress in learning will reflect favorably on our profession and on the care of our patients.

Gerald O. Strauch, M.D.
Guest Editor

EMS—The Politics of Saving Lives

In the last year, Connecticut has begun the difficult process of developing comprehensive area-wide emergency medical systems to address the fact that most people and communities are poorly prepared to deal effectively with medical emergencies, or on a larger scale, with disaster.

Legislation: On May 30, 1974 Connecticut passed the Emergency Medical Services (EMS) Act (P.A. 74-

305) and in doing so, became one of a growing number of states to recognize the existence of a complex new health care delivery system with speed as its essence, every member of the community its agent, and the medically jeopardized person or area its target.

The Act is a document of great social and medical significance which finally recognizes that medical emergencies, like those of fire and crime, are a societal responsibility requiring the commitment of the energies and resources of every citizen, more especially the expertise and leadership of the physician. It has already initiated important changes in the conduct of emergency medical care and its implications for future change are profound.

It is timely, therefore, to note some of the reasons for its passage, some of its provisions, its current state of implementation and some implications for the future.

Reasons: During the last decade, there has been mounting national and state concern about potentially avoidable loss of life, disability, and cost resulting from trauma and cardiac disease in crisis situations. That concern has focused critical attention on the events in each community which surround the occurrence and care of medical emergencies.[1] [2]

When a medical emergency occurs in the home, on the street, or in a place of work there begins a predictable sequence of surprise, confusion, frustration, anxiety and terror, shared alike by the victim and those standing nearby, as they wonder who to call, what to do. Seemingly endless delay may follow the attempt to summon help by telephone because of the circuitous route of communication and dispatch of personnel and vehicles. Non-physicians will provide unsupervised, unaccountable medical care often according to conflicting policies set by laymen. A nearby hospital may not be capable of rendering adequate supportive or definitive emergency medical care.

Legislation was needed to provide a statewide plan for the facilitation of emergency medical care delivery, to require minimum standards of training and equipment, and to avoid costly duplication.[3]

Provisions: The new law was largely patterned on recommendations of the National Research Council (1966), the Ad Hoc Connecticut Advisory Committee on EMS and Yale Trauma Program (1973),[4] and a similar federal Act (P.A. 93-154, 1973). It states: "An Emergency Medical Services System provides for the (geographic) arrangement of personnel, facilities, and equipment for the efficient, effective and coordinated delivery of health care services under emergency conditions."

The thrust of the legislation is that it allows for public, professional and paraprofessional participation on EMS councils for statewide and regional health care planning to make efficient use of local resources. Its full implementation would provide quick access to networks of coordinated well-trained teams of individuals and hospitals that could deliver rapid, supervised, and accountable emergency medical care to the jeopardized person or community anywhere in the State.

Implementation: In the last year, Authority for the bill (P.A. 112, 1975) was placed in the Public Health Department under Commissioner Dr. Douglas Lloyd, an Office of EMS, and its Director, Mr. Martin Stillman J.D. Eleven Regional EMS Councils have been formed which have been working with the corresponding local health planning agencies. Those eleven will decrease to five under the new National Health Planning and Resources Development Act of 1974 (P.A. 93-641). A 25-member State EMS Council, advisory to the Governor, has been appointed and is functioning well.

The planning process has begun. It has been inevitably painful and frustrating because it raises disturbing questions for each community and its emergency services about altering traditional rescue roles, losing autonomy to a region, subordinating pride and valued service goals for the System, and changing priorities of financial commitment.

A State-wide EMS Plan was submitted to the federal government for a $2,900,000 grant of which it received only $250,000. That award, well deserved, was given to the Waterbury Area which for years has led the state in Mobile Intensive Care. Minimum standards were developed for first responders and vehicles. $458,000 was recently received for emergency care training programs. Categorization of hospitals is proceeding.

Implications: The need for integrated systems of emergency medical care which begin with the medically distressed patient in the community and extend into the hospital have fostered the development of a new specialty, Emergency Medicine; a new specialist, the Emergency Physician; and a new System of Health Care Delivery, Emergency Medical Services. That system is composed of the victim, the bystander, an emergency dispatcher, responders, and hospitals. Each element must be taught to recognize the presence of medical emergencies and be prepared to offer basic and increasingly sophisticated care in programs that would tie together individuals, communities and medical centers. The advent of EMS systems and legislation have provided new opportunities[5] for physicians to exert leadership, direction, supervision and control of what must remain their province: The conduct of emergency care at the side of the seriously ill or injured person in the community.

Allan A. Brandt, M.D. and Edward A. Rem, M.D.

DR. ALLAN A. BRANDT, Director of Emergency Medical Services, Milford Hospital; President, Connecticut Chapter American College of Emergency Physicians.

DR. EDWARD A. REM, Director of Ambulatory Services, Norwalk Hospital, member of Connecticut Advisory EMS Council.

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Use of Extended Care

A recent issue of *Prism* contains an interesting and informative article entitled "Extended Care Beds That Nobody Wants." It shows what physicians could do, but didn't, to decrease hospital costs, but may when PSRO becomes effective.

The experiment: The article relates the experiences of a 7-man group of internists by analyzing all the patients they admitted to one community hospital during a 12-month period. The setting—Charlotte, North Carolina—where acute hospital beds have long waiting lists to the three local general hospitals. Though the need for an extended care facility had been desired by different segments of the community, including the physicians, they could not come to a decision. Meanwhile, while they were waiting to act, Medicenter of America, a private corporation, stepped in and built a modern 133-bed extended unit.

But it was not a success. With a 133-bed capacity, it averaged a census of 33 patients. The article explains why. The group hired a registered nurse assigned full-time to transfer their patients from the acute hospital to ECF—visit them, and keep in touch with members of the group. She also became acquainted with patients' families. She did all the paper work, and monitored the acute hospital patients, alerting the members when patients were ready for transfer to ECF. The liaison among patients, the nurse, and each member of the group could not be better. But the results at the end of the year were disappointing:

> The group admitted 894 to their acute hospital—74.5 per month.
>
> The average hospital stay was 9.4 days.
>
> They admitted an average of 5 patients monthly to ECF—6.7% of the total.
>
> Total general hospital days were 8,448, ECF—1,026, a combined total of 9,474, with 10% spent in ECF.
>
> The nurse and one of the internists considered that 9.8% of the total number *could have been admitted directly to extended care;* these accounted for 557 days of the total acute hospital days of 8,448 that could have been saved.

In addition, 338 of the total acute hospital days were absorbed by patients *who could have been transferred to ECF,* but were not because they had no ECF insurance benefits or because their physicians refused consent. Of those admitted to the acute hospital, 66% had some type of ECF coverage; about 335 had Medicare and 559 non-Medicare patients had ECF coverage.

Now to come to that important element in the whole problem—behavior of the members of the group. Two of the 7 physicians accounted for the largest number of ECF patients. Some used it occasionally; some rarely. What barriers did they find to its use, and why? It was not insurance or a difference among the patients. The entire group met weekly and reviewed all their patients in the acute hospital. The nurse kept each physician informed as to eligibility and readiness of patients for transfer to ECF. It was not the patients' reluctance to be transferred because most agreed with their physician's recommendation. The nurses facilitated transfer whenever this was permitted. Yet even with the passage of time, utilization by the physicians did not change.

The only conclusion drawn was that it was each physician's attitude that played a major role in under-utilization of ECF and their variability in practice habits. Though each did not seem to change his habits, still a great saving was effected by use of ECF over the year. At that time the average acute hospital day cost was $94, and in ECF, $39 per day. If the patients had remained in the acute hospitals, it would have cost $50,000 more in the year.

If the 88 patients who could have been admitted directly to ECF had been, instead of being detoured through the general hospital as required by Medicare, this also would have saved 557 general hospital days.

They could have saved another 310 general hospital days by transferring patients to ECF when ready.

The potential cost savings by just these 7 physicians in one year was $83,550, or $12,000 per physician in the group.

This experience gives the obvious and cost saving conclusion: insurance companies ought to include coverage for ECF. ECF ought to be as near to hospitals as possible. The Medicare regulation that 3 days of hospital admission is necessary has its attendant cost. To be seen will be the effect of PSRO; it mandates a provision of care of patients at the lowest cost consistent with the norms of quality. Physicians will have to justify the necessity for in-patient care for all federally paid beneficiaries; this may offer a comparison with non-federal patients. As things stand now, "Physicians' preferences seem to be the determining factor in the efficient use of extended care facilities."

Fred Fabro, M.D.

Clinical Relevancy Revisited

We are supportive of measures which directly or indirectly result in the improvement of clinical microbiology. However, the concept that diagnostic work performed in the clinical laboratory be of the highest quality and relevant to patient care is neither novel nor unique. The concept of clinical relevancy is a dynamic one and must be subject to continued revision. Although we have some reservations concerning the details of the published report, we believe that conformity to a standard set of recommendations is neither practical nor possible for all hospitals. Therefore, we will not take issue with the laboratory details of this report.

One of the major objections to the publication of the report is that some of the stated objectives were not met. For example, the "objective standards" introduced to control unnecessary and potentially misleading microbiological data are, for the most part, not substantiated by objective data but are reflective of anecdotal experience.

Still another problem is that emphasis is directed primarily to the laboratorian when many of the critical issues emphasized in the report are a function of the medical and nursing staffs. Greater effort should be exerted to educate health care personnel in methods of specimen collection and transport.

We realize that the committee attempted to develop recommendations and not promulgate rigid policy. However, the establishment of this committee by the State Department of Health lends official recognition to these "recommendations." There is a danger that technologists may interpret such guidelines without critical evaluation or appreciation of the individual hospital situation.

There are deficiencies in many microbiology laboratories which need to be rectified. These deficiencies are a function of: a) inadequate undergraduate training and continuing education of medical technologists in clinical microbiology, b) the lack of supervision of technical personnel by doctoral directors in a majority of laboratories. This is due, in part, to a shortage of well-trained professional microbiologists and a general lack of interest in clinical microbiology.

Solutions to this problem are numerous. They include: a) support of advanced training in microbiology at all degree levels, b) expanded state-wide continuing education programs especially in those areas in which there are recognized deficiencies, c) a rotating pool of qualified consultants with expertise in clinical microbiology and infectious diseases, members of which would be available to all laboratories in the state, d) professional certification at all levels in microbiology, and e) peer review of laboratory operations.

The implementation of these suggestions is the responsibility of all microbiologists and not any single regulatory agency.

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**This author served as a member of the Committee on Clinical Relevance in Microbioloby but requested that his name be removed from the document prior to publication, due, in part, to disagreement with the content and nature of the report.*

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Professional Liability Insurance Program of the Connecticut State Medical Society: Fourth Annual Report

Aetna Life & Casualty, August 1975

Introduction

We are pleased to present the fourth annual report of the Connecticut State Medical Society's Professional Liability Program.

The following report, covering the period of October 1, 1971 to date, is divided into four main sections.

1. Future of CSMS-AEtna Program
2. Marketing-Underwriting
3. Loss Control and Education
4. Actuarial (Cost)

Before commenting on the specifics of the report as it pertains to the Society, we believe it necessary to review the Professional Liability insurance situation on a countrywide basis.

In our annual report to your Society last year, we commented on the deterioration of the Professional Liability Insurance · market. Since that time the situation has worsened and has reached a critical stage in many states. These critical situations have developed primarily where doctors have been unable to secure Professional Liability insurance. Since the news media and medical journals have covered the various state situations, it is not the intent of this report to restate them. We point out the countrywide dilemma only to indicate that the success of the CSMS Program has, so far, prevented a crisis from developing in Connecticut. The fact that we have been successful to date, due to the commitment of the AEtna and the Connecticut State Medical Society, does not mean that our efforts can be relaxed. In fact, now more than in the past, we must work together to continue to make the CSMS Program work.

Below is a glossary of terms which will aid in your understanding of this report.

1. *Underwriting Losses*—Negative profits on Insurance Operations, i.e., outgo (claims and expenses) exceed income (premium).
2. *"Long Tail"*—The many years span between the time when a claim takes place and is reported and paid.
3. *Primary Professional Liability*—Basic Professional Liability Insurance as opposed to the excess Professional Liability coverage contained in the "Catastrophe" coverage portion of the Package.
4. *Professional Liability Basic Limits*—The minimum limits ($25,000 Per Claim/$75,000 Aggregate) of Professional Liability Insurance.
5. *Professional Liability Increased Limits*—Limits above the basic limits.
6. *Rate Differentials*—The difference in basic limit rate by the classification of Physician.
7. *Classification Relativities*—Another term for rate differentials. See No. 6 above.
8. *Incurred Calendar Year Losses*—The liability incurred by the Company to pay claims and provide legal defense for insureds during a January 1 to December 31 period.
9. *Mean Actuarial Reserve*—Standard accounting practice requires that adequate reserves be held by the Company in anticipation of future payment for claim liabilities which have already been incurred.

   For professional liability the late reporting of claims requires that substantial reserves be held until these claims are reported and paid. The mean actuarial reserve is simply the average reserve held during a given time period.
10. *Company Surplus*—Standard accounting defines company surplus to be the excess of total company assets minus liabilities. This is the money that could be distributed to shareholders of the company, should it be liquidated. For a going concern, this money is held as a safety margin to guarantee against insolvency. Normally reserves are funded from premium, but when there is no premium left, necessary reserves are automatically funded from company surplus.
11. *Loaded Loss Ratio*—The total incurred claims, including actuarial reserves, divided by the total premium.
12. *Average Trend Factor—Claim Frequency*—The average annual increase in the number of claims per doctor.
13. *Average Trend Factor—Claim Cost*—The average annual increase in the size of claims.
14. *Insurance Charge*—A premium charge applied to the initial premium to cover the probability that the needed premium will exceed the estimated needed premium to profitably insure the program.

FUTURE OF CSMS-AETNA PROGRAM

The original five year agreement between CSMS and AEtna expires as of October 1, 1976. Very understandably there is concern on the part of CSMS as to what the AEtna's position will be as of October 1, 1976, especially in view of the overall chaotic medical malpractice situation that currently exists today in several states.

When we embarked on the Program four years ago we agreed on certain basic concepts:

1. AEtna would provide a broad insurance program at the lowest premium possible based on experience developments.
2. We would work together to the best of our respective abilities to create and operate an outstanding Loss Control and Education Program.
3. We would mutually agree on changes in the program as changing conditions dictated the wisdom of making such changes.
4. We would work together to solve problems as they arose.

AEtna believes good progress has been made as respects all of these concepts and that much more will be made in the next several years as we continue to work together. The task ahead is difficult but AEtna believes that answers can and will be found. Present indications are that legislative changes will be heavily involved. Such legislative changes could change insurance concepts materially. However, whatever happens will in our opinion be for the common good.

Therefore, AEtna has concluded to accept the challenge of the future and guarantee to CSMS right now that it will continue the cooperative effort with CSMS for an additional five year period. This guarantee contemplates continuing support from CSMS for the establishment and use of adequate premium levels after full disclosure of experience developments. It also contemplates continuing cooperation by CSMS in The Loss Control and Education Program.

No one knows what changes may come about during these next six years. However, we have every confidence that CSMS and AEtna will be able to work them out.

MARKETING-UNDERWRITING

There has been an increase in the number of enrolled members during the past year. As of July 1, 1975, 3,312 doctors out of the 3,618 eligible members of the Connecticut State Medical Society have elected to participate in the program. This represents 91.5% of the eligible membership.

While successful penetration is an overall objective of all concerned, the primary goal of AEtna underwriters is to improve the CSMS Program in every possible manner. This applies not only to keeping the premium at the lowest level possible, but also to improving coverage. Since the practice of medicine constantly changes, we will continue to react to change in order to provide a stable Professional liability market for CSMS members.

Major Accomplishments from 10/1/71 - 10/1/75

1. Stabilized the Professional Liability Insurance Market in Connecticut for physicians and Surgeons.
2. Kept Professional Liability insurance premiums in Connecticut at one of the lowest levels in the country, plus more than $108,000 in dividends have been paid.
3. Provided a quality coverage program designed to meet the needs of Connecticut doctors. Since the inception of the CSMS Program, two coverage changes have been made in the Program.
   A) A doctor may choose $250,000 of Excess Major Medical Coverage in place of the $25,000 limit available when the CSMS Package was first introduced.
   B) At the request of the CSMS Insurance Committee, Defendants Reimbursement Coverage was developed and made available as an option to the CSMS Package.
4. Cancellation or non-renewal activity has been minimal. Under the terms of the CSMS Program, anyone who is denied coverage is fully advised of his rights relative to a hearing before your committee. Five members have requested such hearings. In four cases, the AEtna's position was sustained by the CSMS Insurance Committee. In the other case, the AEtna agreed to the recommendation of the CSMS Insurance Committee to continue the doctor in the CSMS Program.

Premium Cost for 10/1/75 - 76

The total CSMS package premiums will increase approximately 41%.

LOSS CONTROL & EDUCATION

With general agreement within the insurance industry that the best approach to the malpractice problem is prevention, our Loss Control & Education Program has been expanded within the last year. A full-time Account Supervisor was appointed to coordinate all Marketing, Underwriting, Claim and Engineering activities and to assure an open line of communication between AEtna and the Society. In our opinion, a long-range program of Loss Control & Education, which includes the study and evaluation of actual and potential claims and the involvement of Society membership, continues to be the best approach to combat the Professional Liability problem. Acceleration, rather than diminution of this type of activity, is our objective for the coming account year.

In the last report given to this Committee on July 31, 1974 we had reported 209 incidents of malpractice. As of May 1, 1975 we had a total of 445 incidents reported, which represents an increase of 113%. Of the incidents reported, 375 were made into claims and dollar reserves established. As of 3/31/75, these claims account for $2,552,487 in incurred losses. With 153 cases open at present, an average reserve of $12,717 per case is reflected. A review of claim data discloses that while only 19 cases were in suit a year ago, the present total of 97 indicates an increase of 411%. AEtna's Associate Medical Director, David Kellsey, M.D. and AEtna's CSMS Account Supervisor, Frank Ginty, have reviewed, categorized and analyzed all incidents that have arisen since the inception of the Program. The following is a comparison of the increase in cases during the last two years.

NUMBER OF INCIDENTS BY SPECIALTY

Class Code	*Specialty*	*Number of Incidents*	
		5/1/74	*5/1/75*
8302	Physicians/Major Surgery	11	15
8332	Surgeons—Gen. Surgery	18	39
8335	Thoracic Surgeons	2	5
8342	Urologists	9	20
8352	Anesthesiologists	20	55
9355	Neurosurgeons	5	15
8361	Physicians—No Surgery	54	105
8362	Obstetricians & Gynecologists	43	80
8365	Orthopedists	16	44
8371	Physicians—Minor Surgery	9	17
8375	Plastic Surgeons	6	10
8372	Otolaryngologists—Plastic Surgeons	4	10
8325	Otolaryngologists—No Plastic Surgery	5	15
8312	Ophthalmologists	5	12
9720	Incorporations	2	3
	TOTAL	209	445

Some of the more serious losses that are open and/or in suit are:

27 fatalities ranging from newborns to dependent fathers of households.

8 potential brain damage cases ranging from infants to dependent fathers.

5 cases involving paralysis.

2 cases involving amputations, one involving loss of a leg and the other amputation of both feet.

4 cases of alleged loss of vision.

Others involve perforated esophagus, jaundice of a newborn, ruptured bowel, perforated gallbladder, vocal cord paralysis, severed femoral nerve and perforated ileum, peritonitis following laparotomy, foreign objects retained, and lack of informed consent. In the present claim climate the potential dollar exposure on these incidents could be astronomical.

SETTLEMENTS OR VERDICTS

The following claim payments are indicative of the deteriorating claim climate in Connecticut:

Hysterectomy—Loss of Leg	$55,000
Mismanagement of Leg Fracture	45,300
Amputation of Arm	135,000
Paraplegia	199,000
Paraplegia	310,000
Bladder Damage	66,421
Quadraplegia	360,000
Cardiac Arrest	477,238
O/B Fatality	400,000
Newborn Blindness	228,000
Illegal Confinement	50,000

The accompanying defense expenses of malpractice suits plays a large part in the total cost of malpractice coverage. HEW studies indicate that almost 27% of case reserves represent legal expense. A review of Connecticut figures shows that our defense expenses are commensurate to those indicated by HEW.

EDUCATIONAL ACTIVITY

An additional color videotape—"Do No Harm"—was produced by AEtna to supplement the five videotapes already used for educational purposes. It is estimated that these lectures and presentations have reached at least 25% of the health care delivery system in the state. Indications are that AEtna is the only carrier to fully recognize the need for an educational approach to help solve the malpractice problem. Surrounded by "crisis states," one cannot ignore the fact that physicians in Connecticut were oriented early and, hopefully, well to the growing problem of malpractice.

While many states are presently faced with escalating costs and a lack of market, the Connecticut State Medical Society still provides its membership with a comprehensive Professional Liability Insurance Program. The impact of this message was delivered to the Council of the Society in the recent seminar designed to focus on AEtna's leadership in this area.

DISTRICT CLAIM REVIEW PANELS

Since the last report to the Professional Liability Committee, all four District Claim Review Panels have not only been reactivated, but also reconstituted, to provide the best possible impact in evaluating malpractice suits. More than 125 physicians and surgeons have heard 75 cases involving suits against Society membership. The two fold purpose of providing an impartial form for review of the standard of care, and education and insight into the realities of the problem, has been productive. This Program, perhaps the most highly developed and sophisticated in the nation, has the enthusiastic endorsement of the Society, defendant doctors, their defense counsel and the AEtna Claim Department. Future plans are to expand and refine this approach to claim evaluation. Involvement is the keystone. The appointment of Drs. Deren and Nolan to the Loss Advisory Committee to the Connecticut Hospital Association is an effort to expand this concept to hospital malpractice.

CONCLUSION

While it is difficult to evaluate the impact of the unique program of loss prevention within the "Connecticut Plan," it is fair to assume that it is not counterproductive.

The growing interest on the part of physicians in the program has led to increased trust in providing the AEtna with information leading to possible claims. If nothing but better communication has resulted, we and the Society can only benefit by it.

Actuarial Rates

Rates will increase in the Basic Limits and Increased Limits portion for Primary Professional Liability. Basic Limits premium will increase 11.3%. The Increase Limits portion of the rate will increase approximately 18.4%. The combined effect of the Basic Limits and Increased Limits rate changes will be approximately 31.8%. This means that for the 100/300 and 250/500 Primary Professional Liability Coverage under the CSMS Program premiums will increase 31.8%. Attached as Exhibit I is an intuitive exhibit to give you a feel for this need using CSMS experience for Account Years 1971, 1972 and 1973. While not sufficiently precise to be a rate filing, it should help you in understanding some of the components of ratemaking.

Frequency and severity trends continue to rise. The annual percentage increase for these combined components used in this year's Basic Limits ratemaking is 23.5%. Countrywide Total Limits trend for these components is +28.6%. Actual Connecticut total limits data alone showed a somewhat higher increase. For Connecticut from 3/31/74 to 3/31/75 an increase of 39.8% was observed in the ratemaking data.

SCOPE premiums will also increase this year. The total package premiums and the percentage increase from 10/1/74 to 10/1/75 are set forth in Exhibit II. The effect on CSMS total Package Premium will be approximately +41%.

As a company, we are always striving to reduce our expenses. In the past several years this has proved to be particularly fruitful in the Professional Liability area. A few years ago our permissible loss ratio was 55%. By the inception of the program in Connecticut we were up to a permissible loss ratio of 65%. As shown in the intuitive exhibit (Exh. I), this year's rate level will be based on a permissible loss ratio of 68.9%. This means that as a company we have reduced expenses and profit from 45% to 31.1% in a relatively short time. Our Mass Marketing programs including Connecticut benefit even more. Assuming CSMS expense savings continues to run at about 9.3%, 78.2% of the premium dollar will be available to pay losses or return expense savings. Of the 21.8% remaining, 5.7% is for Commission, 3.9% for Taxes. 7.2% for Company Administrative Expenses and a 5% Profit Load. Hopefully, we can continue improving in this important area.

Dividend Calculation

This year's calculation included Account Years 1971, 1972 and 1973. As set forth in Exhibit III, Sheets 1 and 2, the cumulative loss savings are negative and exceed the cumulative Expense Dividend—Net. Thus, there will be no dividend this year.

CONNECTICUT

	ACCOUNT YEAR		
	1971	*1972*	*1973*
1. Loss Ratio (Line 3, Exh. III)	.912	.899	.791
2. Average Exposure Date for Account Year	4/1/72	4/1/73	4/1/74
3. Average Exposure Date for Proposed Rate Level	4/1/76	4/1/76	4/1/76
4. Number of Years Trend to Project Prior Experience to Coverage Period	4	3	2
5. Average Trend factor for 12 month period—Claim Cost & Claim Frequency	28.6%	28.6%	28.6%
6. Claim Cost & Claim Frequency Trend Factor required to bring Account Year Experience to Projected Level (1.0 + [(4) x (5)])	2.144	1.858	1.572
7. Loss Ratios @ 4/1/76 Loss Levels [(1) x (6)]	1.955	1.670	1.243
8. Loss Ratios @ Current Rates [(7) + 1.69]	1.157	.988	.736
9. Average Loss Ratio—Projected		.960	
10. Permissible Loss Ratio		.689	
11. Indicated Rate Level (10) + (11)		1.393 or +39.3%	

NOTE: This exhibit is for illustrative purposes using CSMS data. Actual rates are made separately for Basic Limits and Increased Limits. Basic Limits are made by AEtna using our own data. Increased Limits Factors are promulgated by the Insurance Services Office.

PACKAGE PREMIUM COMPARISON: CONNECTICUT

	EFFECTIVE DATE				*% Change 10/1/74 to 10/1/75*
	10/1/71	*10/1/73*	*10/1/74*	*10/1/75*	
CLASS I—Physicians—no surgery	*445*	448	678	913	+34.7%
CLASS II—Physicians—minor surgery or assist in major surgery on own patients	*716*	712	1148	1579	+37.5%
CLASS III—Surgeons—general practitioners who perform major surgery or assist in major surgery on other than their own patients.	*1568*	1499	2033	2872	+41.3%
—Ophthalmologists					
—Proctologists					
Surgeons —Specialty					
Anesthesiologists	*2549*	2436	3323	4728	+42.3
Cardiac Surgeons	*2059*	1968	3323	4728	+42.3
Neurosurgeons	*2549*	2436	5258	7511	+42.8
Obstetricians—Gynecologists	*2549*	2436	3967	5656	+42.6
Orthopedists	*2549*	2436	5258	7511	+42.8
Otolaryngologists—plastic surgery	*2549*	2436	3323	4728	+42.3
Otolaryngologists—no plastic surgery	*2059*	1968	3323	4728	+42.3
Plastic Surgeons	*2549*	2436	3967	5656	+42.6
Surgeons—General	*2059*	1968	3323	4728	+42.3
Thoracic Surgeons	*2059*	1968	5258	7511	+42.8
Urologists	*2059*	1968	2678	3800	+41.9
Vascular Surgeons	*2059*	1968	5258	7511	+42.8

DIVIDEND CALCULATION*: CONNECTICUT

Experience from 10/1/71 to 10/1/74

	Account Year 1971 (as of 42 months)		*Account Year 1972 (as of 30 months)*		*Account Year 1973 (as of 18 months)*		
	Percent	*Dollars*	*Percent*	*Dollars*	*Percent*	*Dollars*	*Cumulative*
1. Earned Premium	100.0	*1,685,601*	*100.0*	*2,307,271*	*100.0*	*2,621,802*	*6,614,674*
2. Loss and Loss Adjustment Provision /(1) X .65/	65.0	*1,095,641*	*65.0*	*1,499,726*	*65.0*	*1,704,171*	*4,299,538*
3. Actual Loss and Loss Adjustment Expenses Loaded for Reserve Development and IBNR**	91.2	*1,537,268*	*89.9*	*2,074,237*	*79.1*	*2,073,845*	*5,685,350*
4. Loss Savings Indicated /(2) - (3)/	(26.2)	*(441,627)*	*(24.9)*	*(574,511)*	*(14.1)*	*(369,674)*	*(1,385,812)*
5. Insurance Charge		*0*		*0*		*0*	*0*
6. Indicated Loss Dividend /(4) - (5)/	(26.2)	*(441,627)*	*(24.9)*	*(574,511)*	*(14.1)*	*(369,674)*	*(1,385,812)*
7. Previously Paid Loss Dividend		*NA*		*NA*		*NA*	*NA*
8. Net Loss Dividend this Statement		*NA*		*NA*		*NA*	*NA*
9. Indicated Expense Dividend	9.7	*163,503*	*9.4*	*216,883*	*9.3*	*243,828*	*624,214*
10. Previously Paid Expense Dividend	7.2	*121,363*	*2.9*	*66,238*	—	*0*	*187,601*
11. Expense Dividend—NET	2.5	*42,140*	*6.5*	*150,645*	*9.3*	*243,828*	*436,613*
12. Total Dividend Due This Statement***							*0*

Dividend Percentage Applicable to 1973 Account Year
Primary Professional Liability Premium 0.0%

	1971	*1972*	*1973*
* ( ) = Negative			
** (a) Incurred Loss Ratio	.640	.429	.166
(b) Loss and Loss Adjustment Expense /1.10 x (a)/	.704	.472	.183
(c) Actuarial Reserve	.208	.427	.608
(d) Actual Loss and Loss Adjustment Expense Loaded for Reserve Development and IBNR /(b) + (c)/	.912	.899	.791

*** Total Dividend Due this Statement = 11.) if 6.) is positive
if 6.) is negative, the amount that 11.) exceeds 6.).

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CONTRAINDICATION: Idiosyncrasy to this drug.

WARNINGS: Data supporting the use of nitrites during the early days of the acute phase of myocardial infarction (the period during which clinical and laboratory findings are unstable) are insufficient to establish safety.

PRECAUTIONS: Use with caution in patients with glaucoma. Tolerance to this drug, and cross-tolerance to other nitrates and nitrites may occur.

ADVERSE REACTIONS: Cutaneous vasodilation with flushing. Headache may commonly occur, and may be both severe and persistent. Transient dizziness and weakness, in addition to other signs of cerebral ischemia associated with postural hypotension may occasionally be seen. ISO-BID can act as a physiological antagonist to norepinephrine, histamine, acetylcholine and many other medications. An occasional patient may show marked sensitivity to the hypotensive effects of nitrite; severe responses (nausea, vomiting, weakness, restlessness, pallor, excessive sweating and collapse) can occur, even with the usual therapeutic dosage; alcohol may enhance this effect. A drug rash and/or exfoliative dermatitis is occasionally seen.

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PIONEERS IN GERIATRIC RESEARCH

Public Holds Doctors Liable for Malpractice Insurance Crisis

by George Gallup

PRINCETON. N.J.—With doctors' strikes erupting over the medical malpractice insurance crisis, and legislatures in many states trying to write laws to deal with this problem, the Gallup Poll went to the American public with five widely-debated proposals for dealing with the problem.

Indicative of the widespread public interest in the issue, an extremely high proportion of Americans (nine in 10) say they have heard or read about the difficulties doctors and hospitals are having in getting malpractice insurance.

The proposal which wins the public's greatest support is one requiring the medical profession to do a better job of policing itself.

Here is how the public votes on each of the proposals, ranked in order of their preference of requiring the medical profession to take more effective measures to get rid of incompetent doctors.

- By a vote of 80 to 10 per cent, the public approves of fixing in advance the amount a lawyer can charge for his fee in a malpractice case.
- By a vote of 62 to 25 per cent, the public approves of setting a top limit on the amount a jury can award a patient who wins a malpractice suit.
- By a vote of 59 to 30 per cent, the public approves of making it impossible to sue either a doctor or hospital after a period of five years following the treatment of a patient.
- By a vote of 57 to 25 per cent, the public approves of settling malpractice suits out of court, by an arbitration panel or committee.

The public's views on this issue are important since it is they who eventually will have to pay the costs of increased medical insurance through higher medical fees. Federal estimates are that, because of the higher rates doctors and hospitals must pay, each visit to a doctor's office now costs a patient an additional $1.50 to $2.00 and a hospital bed an additional $10.

Furthermore, it is believed that the rash of malpractice lawsuits, with juries awarding sums of a $1 million in some instances, is leading some doctors to practice what is described as "defensive" medicine. This means doctors are taking expensive and often unneeded precautions to protect themselves against lawsuits. This practice, says Caspar Weinberger, secretary of health, education and welfare, costs the public somewhere between $3 billion and $7 billion per year.

This question was asked in the survey:

"Here are some ideas that have been suggested as ways of dealing with the malpractice problem. Would you tell me in the case of each one whether you approve or disapprove of the proposal?"

Here is the wording on each proposal and the vote (based on the total sample):

1. Require the medical profession to take more effective measures to get rid of incompetent doctors. Approve ... 85%
Disapprove.. 7%
No opinion.. 8%
lawyer can take for his fee. Approve 80%
Disapprove.. 10%
No opinion.. 10%

2. Fix in advance the amount that a lawyer can take for his fee. Approve 80%
Disapprove.. 10%
No opinion.. 10%

3. Set a top limit on the amount a jury can award a patient who wins a malpractice suit. Approve........................... 62%
Disapprove.. 25%
No opinion.. 13%

4. Make it impossible to sue either a doctor or a hospital after a period of five years following the treatment of the patient. Approve................................ 59%
Disapprove.. 30%
No opinion.. 11%

5. Settle malpractice suits out of court by an arbitration panel or committee.
Approve.. 57%
Disapprove.. 25%
No opinion.. 18%

The results are based on 1,626 adults, 18 and older, interviewed in person in more than 300 scientifically selected localities during the period May 30 - June 2, 1975.

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No one is more aware than I that the so-called private research universities are very dependent upon public largesse. I would estimate that the liberal arts and sciences institutions like Stanford, Harvard, Chicago, and Yale are at least one-third financed by the national government. This is, of course, heavily concentrated in medicine and the physical sciences. In the case of places like M.I.T. and Cal Tech. the degree of government dependence is much higher.

By and large, federal research grants and contracts, and federal fellowship and loan funds, have not been abusively administered. We have been insulated from the corruption which so often infests municipal and state and even federal service and construction contracts. This is largely because the decision about who gets what in the academic world is determined not by bureaucrats or politicians, but by panels of scientists drawn from outside of government.

For the most part, conditions and requirements have not been attached which would strike directly at constitutionally protected interests, such as freedom of expression, of association, or of inquiry. The non-communist disclaimer required of federal fellowship and loan recipients was repealed before it was authoritatively tested. Maybe it would have been stricken down as an "unconstitutional condition." It would not have been easy, however, for a student to gain standing to sue, simply because he was denied a loan on account of his refusal to sign the disclaimer.

Such dramatic invasion of clearly protected constitutional rights is not what bothers me today, as it might have been ten years ago. It might have been on the top of my mind even five years ago, during the late sixties, when "student unrest" tempted many politicians to seek to extend a federal police power onto the campuses in violation of personal as well as academic freedom. Now my concern is less dramatic, more persistent, perhaps more fundamental than such passing lurid crises.

My fear is that there is a growing tendency for the central government to use the spending power to prescribe educational policies. These are matters which they could not regulate were it not for our dependence on their largesse. I am worried that maybe we do not have any obvious constitutional basis on which to resist this encroachment. It will always be asserted that the government as grantor, lender, or contractor, has a legitimate interest in all aspects of our behavior, once they have financed any part of our activity.

When I say "the Constitution is dead; long live the Constitution," I mean merely to assert that even if there may be no legal basis to resist the conditions which the government imposes, there is still force to the values which the Constitution embodies: recourse to objective review of alleged abuse and limits on centralized regulation of local matters by Washington. I would assert that these values are no less valid and deserving of vigilance when regulation takes the form of conditions attached to a federal grant than they are when regulation is direct, under color of regulating interstate commerce, or promoting the general welfare.

Certainly the sanction of withdrawal of federal support is at least as great as any conceivable financial penalty which might be imposed for violation of criminal or administrative law prohibitions or requirements.

Abuse for raw political or vindictive motives is no less conceivable in the administration of the spending power than in regulatory administration. An "enemies list" policy can be as effectively carried out by one route as by another. Indeed the difficulty of obtaining review of a denial of a grant or a contract makes the allocation or withholding of funds easier to manipulate for political purposes. This was precisely what was proposed, apparently in response to Presidential request, in order to get back at Jerome Wiesner for his opposition to the anti-ballistic missile program. Memoranda, said to have been approved by John Erlichman, urged that M.I.T. be deprived of Department of Defense grants and contracts as a technique of "disciplining" its President, later revealed to have been on John Dean's "enemies list." Leakage of the vindictive plan did threaten a backlash and the matter was dropped. One wonders, however, whether legal recourse ever could have protected M.I.T.'s interest if the policy had gone forward.

But even if such raw, "smoking gun" abuses might find their constitutional come-uppance, there have been other less flagrant, but equally pernicious, efforts to use the leverage of the spending power to "discipline" educational institutions. The most notorious was Congressman Hebert's persistent effort to deny all Department of Defense grants, for students as well as for research, to any institution which discontinued its Reserve Officers Training program. When this failed as a legislated condition, the Armed Services were so terrified of antagonizing the powerful Armed Services Committee, they withheld contracts and

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KINGMAN BREWSTER, JR., President of Yale University, gave the address, from which these excerpts are taken, before the Fellows of the American Bar Association, February 22, 1975.

diverted officer graduate students from colleges and universities which had terminated their ROTC programs. The spirit of the Constitution was twice flouted, first by imposing the penalty of withholding support from activities which bore no relationship whatsoever to the "offense" of discontinuing ROTC, second, by using the pressure of a legislative committee to compel a policy which that committee could not prevail upon the Congress to enact.

Use of the leverage of the government dollar to accomplish objectives which have nothing to do with the purposes for which the dollar is given has become dangerously fashionable.

Take for instance the health manpower legislation which passed the last Congress but was not resolved in committee before adjournment. Comparable bills have been reintroduced in the House just recently. With laudable motive and seeming plausibility, the proposed legislation seeks to remedy the shortage of primary care physicians and the obvious uneven availability of medical care throughout the country. It does not use the device of special assistance for the training of primary physicians, or special bounties for graduates who commit themselves to practice where they are most needed. It proceeds, rather, by telling the medical schools that all general support for medical education, the so-called capitation grants, will be withdrawn unless a school increases its general practice training and requires some proportion of their graduates to enter practice where there is a shortage of doctors.

Were it not for the federal financial support it would be hard to find warrant in the Constitution for federal regulation of medical school curricula. Even more dubious is the Constitutionality of requiring a school to draft some of its graduates, by lottery or otherwise, to serve involuntarily, in places not of their choice.

It is not sufficient to say that since the government is paying the bills, therefore, it has a right to specify the product. This would be understandable if all that is being offered were special support for the program of special federal interest. To say, however, that support for all general educational activities of national importance will be withheld unless a school enlarges the program the government is particularly interested in, is to use the threat of cutting off aid for one purpose in order to accomplish another. What it does of course is to threaten the non-complying school with a hopeless competitive disadvantage generally if it will not go along with the favored program.

It smacks of the same coercion which makes the tying clause, or the requirements contract, vulnerable under the anti-trust laws. Such coercive use of the spending power is not a proper way for government to deal with its citizens.

I'm not sure what Constitutional grounds could be asserted to resist this leverage. But it does outrage Constitutional values to say that the curricular self-determination of medical schools must be forfeited in order to receive any general institutional support.

This same leverage is carried to far greater extremes in other federal legislation already on the books. It might be called the "now that I have bought the button, I have a right to design the coat" approach.

Thus, if we are to receive support for physics, let's say, we must conform to federal policies in the admission of women to the Art School, in women's athletic facilities, and in the recruitment of women and minorities, not just in the federally supported field, but throughout the University.

As one who presided over the admission of women to a college which had been "for men only" for two hundred and sixty-seven years, and as one who also presided over a strenuous effort to recruit qualified minority students, I think I can be assumed not to be opposed to women's rights and equal educational and academic career opportunity for minorities and women. However, I do object to the notion that the receipt of a federal dollar for some purposes subjects a private institution to federal regulation and surveillance in all its activities. This is constitutionally objectionable, even in the name of a good cause such as "affirmative action."

The essence of Constitutional restraint, I was taught, is that the worthiness of the end should not justify objectionable means.

The farthest outreach of federal regulation under the banner of the spending power is the Family Educational Rights and Privacy Act, the so-called Buckley Amendment to the Education Act. Again, the purpose is laudable. Schools and colleges and universities should not be able to build up prejudicial files on students against which the student has no redress if he has no way of knowing what is in them. But it does not follow that the end justifies the means in this case either.

To use the vernacular of judicial dissent, I would have thought that the one member of the United States Senate wearing the Conservative Party label would bave been especially alert to the evil of expanding federal regulatory power beyond its constitutional bounds simply because the spending power opens the gate. I doubt if anyone would assert that the student records of local schools and colleges are within the reach of direct federal criminal law. Under the Buckley Amendment, however, we forfeit our federal support for research as well as students from the Office of Education if we do not comply with the regulatory requirements of access to student files imposed by legislation introduced by the Senator from New York.

I know there have been some inroads on the doctrine that conditions attached to a government grant cannot be attacked because the grant is a "privilege" not a "right." Since it is not a right, so the argument goes, the recipient has no standing to complain of any conditions imposed on him. Professor VanAlstyne has traced the erosion of this position at the hands of advocates and judges alert to the economic realities, which so often make government largesse a necessity for competitive survival. Still, in the legislative and in the popular mind, when the spending power is involved, there is a relaxed, "anything goes" attitude toward the spread of federal regulations.

Also apart from the traditional barriers to legal attack, there are practical inhibitions on redress. Financially weak institutions, like financially weak individuals, will think twice before bringing their indispensable banker or grantor into court.

Yet we all know that many activities once thought to be wholly private, whether for profit of for *pro bono* purposes, are increasingly dependent upon government funds. Government may be banker, it may be guarantor, it may be grantor, it may be contractor or purchaser. As such it has every right, indeed obligation, to be sure that every dollar is accounted for, to be sure that it is spent efficiently, to be sure that its uses comport with Constitutional requirements of equal opportunity and non-discrimination.

We have been insistent that criminal and administrative regulations should not go beyond what is rationally required by their stated purpose. We must be no less vigilant about the use of spending power as a lever to extend regulation beyond the accountability reasonably related to the purposes for which the support is given. This is crucial if we seek to remain a society which respects localism, which respects voluntarism, which respects the diversity of private initiative.

If I may be pardoned a bit of special pleading in the literal sense, I think that the independent sector of higher education is a specially sensitive case in point. Institutional diversity, autonomous trusteeship and faculty self-determination are the essence of the envied vitality of American higher education and its responsiveness to new fields of knowledge. The strengths would be lost if, as a condition of receiving a federal dollar for some purposes, we were to be subject to federal regulations for all purposes.

I take some encouragement and guidance from a little remembered warning in the leave-taking words of a great President of the United States, Dwight David Eisenhower. We all remember his warning against the mutual corruption of the military-industrial complex, and the dangers it held for our freedom. Hardly anyone remembers that he went on to say: "The prospect of domination of the nation's scholars by federal government, project allocation, and the power of money, is ever present, and is gravely to be regarded."

But if pleading as a college president is special, my plea as a neophyte Fellow of the American Bar Foundation is more general.

When to national security and minimal care for federal lands, and assurance of the free flow of commerce was added the awesome responsibility for the general welfare, lawyers took upon themselves the task of inventing doctrines, procedures, and practices which tried to keep administrative, regulatory power accountable to the rule of law. When to welfare and economic responsibility was added the task of mobilization for total global war, even then the rule of law was not forgotten, in the court of price appeals and later in the judicial veto of executive seizure of the steel industry.

Now the pervasive impact of government upon the citizen, upon private institutions, upon the economy, is not primarily by direct regulation but by exercise of the spending and lending power, whether by grant or loan or by guaranty, or contract or purchase.

High on the agenda of the profession, especially its scholarly branch, should be to see to it that in terms of both limits on authority and redress against its abuse, the coercive power of the federal purse is made subject to a rule of law.

It is high time that we learn once again to ask not only, "Is your objective worthy?" but also, "Are the means you would use consistent with the values of the Constitution?"

"The Constitution is dead: long live the Constitution."

Suggestions for Minimal Obstetric and Pediatric Care

During the past year the Society's Committee to Study Perinatal Morbidity and Mortality, under the chairmanship of William E. Lattanzi, M.D., held a series of meetings with the Chairmen of the Departments of Obstetrics and Pediatrics of community hospitals in the State. After lengthy discussions concerning obstetric and pediatric care in the hospitals and further deliberations by the Committee itself, the following suggestions for minimal obstetric and pediatric care in the State of Connecticut were formulated and forwarded to the Connecticut State Medical Society Council for approval.

The Council approved the suggestions on May 21, 1975.

Obstetrics:

1. External fetal monitor available.
2. Anesthesia services to be available within 20 minutes and preferably on the premises.
3. Capability for C-section (in less than 45 minutes).
4. 24-hour Radiology coverage.
5. 24-hour Laboratory facilities with Fibrinogen analysis available.
6. Second call team for anesthesia and operating personnel.
7. Pediatric consultation available for unexpected high risk delivery.

Pediatrics:

1. Someone should be designated for resuscitation following an agreed upon protocol with adequately trained personnel in attendance.
2. Infant radiant warmer in the delivery room.
3. Criteria for transfer should be established.
4. Use of Apgar area scoring at 1 and 5 minutes.
5. Trained personnel should be exclusively available for observation of infants the first 6 hours of life. Re: The Committee's recommendation on a standard for surveillance of infants in Nurseries was accepted by the Council of the Connecticut State Medical Society. The statement was worded as follows: "At no time should babies in the nursery be left without visual and auditory surveillance by a qualified member of the Nursery staff."
6. Oxygen Analyzer should be available.

Consultation Advised For:

1. Consultation for anticipated high risk delivery is advisable.

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The Doctor Fox Lecture: A Paradigm of Educational Seduction

Donald H. Naftulin, M.D., John E. Ware, Jr., and Frank A. Donnelly

ABSTRACT—**On the basis of publications supporting the hypothesis that student ratings of educators depend largely on personality variables and not educational content, the authors programmed an actor to teach charismatically and nonsubstantively on a topic about which he knew nothing. The authors hypothesized that given a sufficiently impressive lecture paradigm, even experienced educators participating in a new learning experience can be seduced into feeling satisfied that they have learned despite irrelevant, conflicting, and meaningless content conveyed by the lecturer. The hypothesis was supported when 55 subjects responded favorably at the significant level to an eight-item questionnaire concerning their attitudes toward the lecture. The study serves as an example to educators that their effectiveness must be evaluated beyond the satisfaction with which students view them and raises the possibility of training actors to give "legitimate" lectures as an innovative approach toward effective education. The authors conclude by emphasizing that student satisfaction with learning may represent little more than the illusion of having learned.**

Teaching effectiveness is difficult to study since so many variables must be considered in its evaluation. Among the obvious are the education, social background, knowledge of subject matter, experience, and personality of the educator. It would seem that an educator with the proper combination of these and other variables would be effective. However, such a combination may result in little more than the educator's ability to satisfy students, but not necessarily educate them.

Getzels and Jackson[1] have stated that the personality of the teacher might be the most significant variable in the evaluation of teaching effectiveness. Wallen and Travers[1] also supported this concept in stating that "we have tried to demonstrate that patterns of teacher behavior and the teaching methods they represent are mainly the products of forces which have little to do with scientific knowledge of learning."

Similarly, Goffman[2] viewed audience receptivity to a lecturer as highly influenced by the person introducing him as well as by the quality of the introduction. In addition, Goffman described an audience as influenced by the speaker's "involuntary expressive behavior" as much as by the expressed information he wished to convey. This is especially so if the audience has had little time to evaluate the information. Consequently, the learner's impression of the information conveyer becomes a decisive factor in how he responds to the information conveyed.

Rogers[3] stressed the importance of humanizing our educational institutions by bringing "together the cognitive and the affective-experiential" aspects of learning. He also discussed the significance of the educator's genuineness. He feels that the educator who does not present a facade is more likely to be effective. The educator, states Rogers, must have a "direct personal encounter with the learner."

In one study[4] in which student perceptions of educators in 1,427 seventh through 12th grade classes were factor analyzed, it was reported that the students regarded "teacher charisma or popularity" as the most important characteristic when rating teachers. The article further states that "students do not respond directly to specific questions regarding teacher effectiveness. Rather a kind of halo effect on teacher charisma or popularity determines to a large extent how students react to questions about their teacher."

If charisma or popularity have such an effect on the rating of teachers by junior high and high school students, the authors wondered whether the ratings of a highly trained group of professional educators in a learning situation might be similarly influenced. If that were the case, a demonstration of the personality factor in perceived learning might serve to arouse the group members' concern about the proper combination of style and substance in their own teaching.

Method

The hypothesis for this study was as follows. Given a sufficiently impressive lecture paradigm, an experienced group of educators participating in a new learning

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situation can feel satisfied that they have learned despite irrelevant, conflicting, and meaningless content conveyed by the lecturer.

To test the hypothesis, the authors selected a professional actor who looked distinguished and sounded authoritative; provided him with a sufficiently ambiguous title, Dr. Myron L. Fox, an authority on the application of mathematics to human behavior; dressed him up with a fictitious but impressive curriculum vitae, and presented him to a group of highly trained educators.

The lecture method was the teaching format selected since it is one used extensively in the professional educational setting. It has been described as the one teaching method during which most of the time the instructor talks to the students.[1] Its acceptance as an effective teaching tool is attributable mainly to its time-testedness.

Dr. Fox's topic was to be "Mathematical Game Theory as Applied to Physician Education." His source material was derived from a complex but sufficiently understandable scientific article geared to lay readers.[5] One of the authors, on two separate occasions, coached the lecturer to present his topic and conduct his question and answer period with an excessive use of double talk, neologisms, non sequiturs, and contradictory statements. All this was to be interspersed with parenthetical humor and meaningless references to unrelated topics.

GROUP I

Eleven psychiatrists, psychologists, and social-worker educators who were gathered for a teacher training conference in continuing education comprised the learner group. The purpose of the conference was to help this group be more effective educators of other health professionals by providing them various instructional goals, media, and experiences. Dr. Fox was introduced as "the real McCoy" to this unsuspecting group; and he presented his one-hour lecture in the manner described, followed by a half hour discussion period which was hardly more substantive.

At the end of his performance an authentic looking satisfaction questionnaire was distributed to which all 11 mental health educators were asked to respond anonymously (Table 1). The introduction of the lecturer as well as his lecture and discussion were videotaped for use with other groups.

Significantly, more favorable than unfavorable responses to the questionnaire were obtained (chi-square = 35.96, $p < .001$). The one item with most favorable responses was the first, "Did he dwell upon the obvious?" It was the feeling of half the group that he did. The remaining items received a majority of favorable responses. No respondent reported having read Dr. Fox's publications. Subjective responses included the following:

> Excellent presentation, enjoyed listening. Has warm manner. Good flow, seems enthusiastic. What about the two types of games, zero-sum and non-zero sum? Too intellectual a presentation. My orientation is more pragmatic.

Because the first group was few in number and quite select, the authors sought other subjects with similar experience and professional identify who might provide further data to test the hypothesis.

GROUP II

The second group consisted of 11 subjects who were psychiatrists, psychologists, and psychiatric social workers, all identified as mental health educators. A videotape of the previously described lecture and discussion period as well as the preparatory introduction was shown to the group. After the presentation group members responded to it using the same questionnaire as did the first group (Table 1). Favorable responses far outweighed unfavorable responses, and the difference between the two was (chi-square = 64.53, $p < .001$). All responded favorably to the first item, which means that they felt he did not "dwell upon the obvious." There were also significantly more favorable than unfavorable responses to the other items and one respondent reported having read the lecturer's publications. Some subjective statements were:

> Did not carry it far enough. Lack of visual materials to relate it to psychiatry. Too much gesturing. Left out relevant examples. He misses the last few phrases which I believe would have tied together his ideas for me.

Still more subjects were sought to further test the hypothesis.

GROUP III

The third group was different in that it consisted of 33 educators and administrators enrolled in a graduate level university educational philosophy course. Of the 33 subjects in this group, 21 held master's degrees, eight had bachelor's degrees, and four had other degrees which were not specified. Most of these educators were not specifically mental health professionals but had been identified as having counseling experience in their respective schools. The videotape of the lecture was again presented to this group, after which the educators responded to it by using the same questionnaire as the first two groups (Table 1).

Again the number of favorable responses was significantly greater than the number of unfavorable

TABLE I

EXAMPLES OF QUESTIONS USED AND PERCENTAGE OF RESPONSES*FOR THREE GROUPS

Questions	Group I		Group II		Group III	
	Yes	*No*	*Yes*	*No*	*Yes*	*No*
Did he dwell upon the obvious?	50	50	0	100	28	72
Did he seem interested in his subject?	100	0	91	9	97	3
Did he use enough examples to clarify his material?	90	10	64	36	91	9
Did he present his material in a well organized form?	90	10	82	18	70	30
Did he stimulate your thinking?	100	0	91	9	87	13
Did he put his material across in an interesting way?	90	10	82	18	81	19
Have you read any of this speaker's publications?	0	100	9	91	0	100
Specify any other important characteristics of his presentation.						

*"Yes" responses to all but item one are considered favorable.

responses (chi-square = 102.83, $p < .001$). The majority of respondents from Group III also did not feel the lecturer dwelt upon the obvious, and they also responded favorably for the most part to the other items. Subjective responses, when given, were again interesting. Some were:

> Lively examples. His relaxed manner of presentation was a large factor in holding my interest. Extremely articulate. Interesting, wish he dwelled more on background. Good analysis of subject that has been personally studied before. Very dramatic presentation. He was certainly captivating. Somewhat disorganized. Frustratingly boring. Unorganized and ineffective. Articulate. Knowledgeable.

Given the responses of these three groups of educators to the lecture paradigm, the authors believe that the study hypothesis has been supported.

Discussion

The notion that students, even if they are professional educators, can be effectively "seduced" into an illusion of having learned if the lecturer simulates a style of authority and wit is certainly not new. In a terse but appropriate statement on educators, Postman and Weingartner[6] emphasized that "it is the sign of a competent crap detector that he is not completely captivated by the arbitrary abstractions of the community in which he happened to grow up." The three groups of learners in this study, all of whom had grown up in the academic community and were experienced educators, obviously failed as "competent crap detectors" and were seduced by the style of Dr. Fox's presentation. Considering the educational sophistication of the subjects, it is striking that none of them detected the lecture for what it was.

In addition to testing the hypothesis, the paradigm was to provide these professional educators with an example of being educationally seduced and to demonstrate that there is much more to teaching than making students happy. A balanced combination of knowledge and personality are needed for effective teaching even if the student does not require the former to sustain the illusion that he has learned. It is hoped that this experience has helped respondents from these three groups to question their educational effectiveness more meaningfully.

To the authors' knowledge a simulated teaching paradigm such as this with student responses to subsequently perceived learning has not been reported. Despite the usual reservations about generalizing data from only 55 subjects, the results of the study raise some interesting questions. The first involves the content of the lecture. Does a topic seemingly short on content and long on ambiguity or abstraction lend itself more readily to such a lecture paradigm than a content-based factual presentation from a more concrete topic area? The answer is an equivocal "yes," as a subject in Group I noted after being told of the study's design. He said he felt that the lecturer might have had a tougher time talking nonsense about a more concrete topic but even under those circumstances a fake lecture could be "pulled off" with an unsuspecting group. This raises the next question.

If the group were more sophisticated about a more concrete aspect of the lecturer's subject matter, in this case mathematics, would he have been as successful in seducing the respondents into an illusion of having learned? Probably not. Or at least the lecturer would have to be extremely skillful to be successful. The study also raises the larger issue of what mix of style and substance in the lecture method is optimal for not just integrating information in a meaningful way but for providing learning motivation as well. Although the study was not specifically addressed to this question, the fact that no respondents saw through the hoax of the lecture, that all respondents had significantly more favorable than unfavorable responses, and that one even believed he read Dr. Fox's publications suggests that for these learners "style" was more influential than "content" in providing learner satisfaction.

A more ideal assessment of the relative value of content and style in determining learner-reporter satisfaction might consist of programming the same "lecturer" to systematically alter the content of his presentation before three equivalent groups of learners. Simultaneously, his "involuntary expressive behavior" would remain constant for each of the three groups; for example, Group A would receive sufficient content conveyed with sufficient "involuntary expressive behavior," Group B moderately insufficient content accompanied by the same "involuntary expressive behavior" as was displayed with Group A, and Group C totally inadequate content delivered in the same manner as to the first two groups; the three groups of learners could then be more systematically compared as to learner perceived satisfaction.

After the respondents in the actual study were informed of its purpose, numerous subjects from each group requested the article from which the lecturer was programmed. Reported intent of these requests ranged from curiosity to disbelief, but the authors were told by some respondents that Dr. Fox did stimulate interest in the subject area even after the respondents were told of the study's purpose. Despite having been misinformed, the motivation of some respondents to learn more about the subject matter persisted. Consequently, it is the authors' impression that the "arbitrary abstractions" suggested by Postman and Weingartner have some initial pump-priming effect on educational motivation.

The relationship of the illusion of having learned to motivation for learning more has not been fully addressed here, but should a positive relationship exist, this study supports the possibility of training actors to give legitimate lectures as an innovative educational approach toward student-perceived satisfaction with the learning process. The corollary would be to provide the scholar-educator with a more dramatic stage presence to enhance student satisfaction with the learning process. Either extreme has a soap-selling quality not likely to lather the enthusiasm of the pure scholar. However, this paper is not addressed to him but rather to student-perceived satisfaction with how well he has shared his information. More important, as has been noted, it suggests to the educator that the extent to which his students are satisfied with his teaching, and even the degree to which they feel they have learned, reflects little more than their illusions of having learned.

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Annual Nahum Award Won by Rochester University Medical Student

James M. Burke of 64 Winthrop Road, Manchester, has been awarded the second annual Louis H. Nahum Memorial Award for Medical Writing according to J. Alfred Fabro, M.D., of Torrington, Editor of CONNECTICUT MEDICINE.

Dr. Fabro said the award is in honor of the late Louis H. Nahum, M.D., of New Haven who for many years was editor of CONNECTICUT MEDICINE *the Journal of the Connecticut State Medical Society. Dr. Fabro stated that the Nahum Award is a writing contest for medical students designed to perpetuate good medical writing in the tradition of Dr. Nahum.*

For his winning paper, "The Water Used in Artificial Kidneys" Mr. Burke will receive a check for $100.00 and a suitably engraved plaque.

A first year medical student at the University of Rochester School of Medicine and Dentistry, Rochester, New York, Mr. Burke is a graduate of Dartmouth College receiving a AB Degree Magna Cum Laude in June of 1974. He is on the Dean's list, is a Phi Beta Kappa and a Rufus Choate Scholar. During his last two summers he worked as attendant to Dr. William H. Stein, Professor of Biochemistry at Rockefeller University, New York City.

Born in Danbury, he attended public schools in Rowayton and Manchester, Connecticut. Mr. Burke is President of the Verplank Chapter of the National Honor Society. His interests include sports and music.

Judging of the contest was conducted by a panel of three physicians representing the Editorial Committee of CONNECTICUT MEDICINE. *They are: Dr. Stephen Fleck of New Haven; Dr. Norman Zlotsky of Rockville and Dr. Hans H. Neumann of New Haven.*

The Water Used in Artificial Kidneys

James M. Burke, Jr.

As criteria for the operation of dialysis machines are becoming defined, increased attention should be given to the quality of the water supply being used in these machines. The initial composition of the water used in dialysis is important, for it determines, to a large extent, the uniformity of the amount of electrolytes added to the dialyzate. Each of the chronic dialysis patients, now numbering over 9,000 in this country, is intimately exposed to between 3,500 and 12,000 gallons of water per year. Since this is from thirty to over one hundred times the amount of water a patient would drink in a year, this means that over ninety-five per cent of the patient's total internal exposure to water occurs during dialysis. The purity of this water to which the patient is exposed is a function of the filtration capabilities of the cellophane membrane across which dialysis occurs. Yet occasionally, essentially untreated tap water is used in dialysis, often with deleterious physiological effects due to the trace amounts of salts, heavy metals, or bacteria in the water supply which are not removed by the dialysis membranes.

In view of the above situation, we thought it would be useful to investigate both what one could expect to find in Connecticut's water supplies, and what practical methods of treatment are available for their preparation for use in dialysis.

The surface water supplies of Connecticut are monitored periodically for bacteriological quality, physical quality, chemical quality, radioactivity, and pesticide content. The maximum allowed concentrations of chemical substances, bacteria, and pesticides are listed in the table.[1] Unfortunately, while Connecticut's waters are safe for drinking, they may be hazardous for use in dialysis if proper precautions are not taken. Several studies serve to emphasize the dangers of chemical and bacteriological poisoning in hemodialysis.

The large volumes of water used in dialysis and the binding properties of metals by plasma proteins can lead to acute or cumulative toxicity with metal concentrations which are well within the listed limits. In one instance, trace amounts of copper as small as 66 micrograms per 100 milliliters in the predialysis serum were reported to have given rise to acute copper intoxication involving pancreatitis, myoglobinemia,

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JAMES M. BURKE, JR., First year medical student, University of Rochester School of Medicine and Dentistry, Rochester, N.Y.

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Adverse Reactions: Varying degrees of drying of salivary secretions may occur as well as mydriasis and blurred vision. In addition the following adverse reactions have been reported: nervousness, drowsiness, dizziness, insomnia, headache, loss of the sense of taste, nausea, vomiting, constipation, impotence and allergic dermatitis.

Dosage and Administration: The recommended daily dosage for adult oral therapy is one 15-mg. tablet with meals and two at bedtime. Subsequent adjustment to the patient's requirements and tolerance must be made.

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Connecticut Drinking Water Standards[1]

Chemical:

Substance	*mg./l.*
Detergents (Methylene Blue Active Substances)	0.5
Chloride	250.0
Hardness (total)	150.0
Iron	0.3
Manganese	0.05
Nitrate (NO_3)	45.0[a]
Nitrogen (N) (Nitrage and Nitrite)	10.0[a]
Sodium	20.0
Sulfate	250.0
Arsenic	0.01
Barium	1.0[a]
Boron	1.0[a]
Cadmium	0.01
Carbon Chloroform Extract	0.2[a]
Chromium (hexavalent)	0.05
Copper	1.0
Cyanide	0.01
Fluoride[b]	
50.0-58.3F	1.8
58.4-70.6F	1.5
70.7-90.5F	1.2
Lead	0.05[a]
Phenols	0.0001
Selenium	0.01[a]
Total Dissolved Solids	500.0
Uranyl Ion	5.0
Zinc	5.0

[a] Concentrations in excess of values listed shall constitute grounds for rejection of the supply.

[b] Annual average of maximum daily air temperatures.

Bacteriological: Shall meet PHS Drinking Water Standards.

Pesticides: Should not exceed the following limits:

Pesticide	*Maximum permissible concentration, mg./l.*
Endrin	0.001
Aldrin	0.017
Dieldrin	0.017
Lindane	0.056
Toxaphene	0.005
Heptachlor	0.018
Heptachlor epoxide	0.018
DDT	0.042
Chlordane	0.003
Methoxychlor	0.035
Total organophosphorous and carbamate compounds	0.1

2,4,4-TP
2,4,5-T
2,4-D

Individual limits equal 0.1 mg./l. Sum of any combination of chlorinated phenoxy alkyl pesticides equals 0.1 mg./l.

gastrointestinal symptoms, leukocytosis, and hemolysis.[2] A case of zinc toxicity has been described in which a patient on home dialysis developed severe anemia with raised plasma and erythrocyte zinc concentrations after using well water with zinc concentrations of 625 micrograms per 100 milliliters in her dialyzate.[3] Cases of hypercalcemia, and hypermagnesemia,[4] as well as methemoglobinemia[5] (from well water nitrates) have also been reported in cases where dialysis patients were treated with water not suitable for use in dialysis.

Bacterial contaminants can also present dangers to dialysis patients. Connecticut's water supplies are monitored only for colliform bacteria which serve primarily to indicate the presence of sewage in the water. Although most water supplies are chlorinated with free chlorine to guard against bacterial growth, pyrogens and organic acids that are produced as waste metabolites by bacteria remain essentially unaffected by this treatment. Robinson and Rosen reported pyrexial reactions of epidemic proportions (an incidence of one patient per month) in their patients when they used tap water to soak the membranes of theirKiil dialyser.[6] Rosenbaum, Alfrey, and Holmes have observed a phenomenon they call "dialysis acidosis" in which bacterially produced organic acids in the dialyzate fluid lower the pH of the dialyzate bath. This in turn lowers the blood pH of the patients being treated, and may cause hypotension and a general deterioration of neurological function.[7]

Several different techniques have been used by hospitals with varying degrees of effectiveness for preparing tap water for use in dialysis. The oldest and simplest method of water purification is plain mechanical filtration. In this process, water passes through the filter—usually either a sand filter, a wound filter cartridge, or a membrane filter—which removes the suspended impurities. Filters of this sort do not, however, remove dissolved or finely emulsified contaminants, and consequently are not considered adequate as the principal means of treatment of water for use in dialysis.[8]

Distilled water is used by some hospitals in the preparation of the dialyzate. Distillation removes nearly all of the salts from the water as well as those organics which do not have a vaporization point close to that of water. Many pyrogens do, however, have a vaporization point close to that of water. Unless very close temperature controls are maintained, many pyrogens will pass over into the purified water. Successive distillations are more effective at approaching complete pyrogen removal, but due to energy demands and scaling problems, the costs of such a procedure is high.[9] The use of vapor compression may reduce energy consumption, but the required apparatus is complex, bulky, and very noisy.

Many hospitals have employed one of two main types of ion-exchange columns as their principal means of water purification. The ion-exchange water softener removes calcium and magnesium ions from water passed through it, and replaces them with sodium ions. Although very effective at removing calcium and magnesium and thus diminishing the possibility of occurrence of the "hard water syndrome," water softening does not significantly change the absolute salt content of the filtered water. In addition, continued high sodium levels in the dialyzate have been found to be harmful, and consequently, ion-exchange water softeners are now deemed inadequate as the final purification treatment for dialysis.[8]

Deionizing ion-exchange columns are comprised of a cation resin with hydrogen ions adsorbed to it, and an anion resin with adsorbed hydroxide ions. The two resins may be in separate columns, but are usually mixed together to form a mixed resin bed. When the water to be purified enters the bed, salts are adsorbed to the resins and are replaced by the hydrogen and hydroxide ions. While deionizing ion-exchange systems to remove salts effectively, they have two major drawbacks. First, they are more effective at removing salts than others. Thus, as more and more of the adsorption sites in the resins are taken, only the most strongly adsorbed ions will continue to be removed, while ions of lesser adsorption strength, such as the controversial fluoride ion will pass through the bed and enter the dialyzate. Second, the anion resin provides an excellent medium for bacterial growth. Since many organic compounds have a slight negative charge, they are attracted to the anion resin and thus serve as nutrients for bacteria that become lodged in the porous structure of the resin.[8]

In order to avoid serious jeopardy to dialysis patients, frequent regeneration on deionizing columns is necessary Manual performance of this is a rather laborious procedure, and even automatic regeneration usually leaves the apparatus out of operation for significant periods of time. In addition, the chemicals used for the total deionization process are rather expensive. Finally, the use and maintenance of deionizing columns involves a risk of severe complications to dialysis patients, if the regeneration fluid is sent into the dialysis system by mistake, or if the content of the ion exchange resin in the column is not regenerated in time.

Recently, reverse osmosis has been used by hospitals to treat water used in the preparations of the dialyzate. Instead of adsorption of ions to a resin or membrane, this process repels ions and sieves organics while pure water passes through the pores of the membrane. A reverse osmosis unit employs a cellulose acetate membrane approximately one hundred microns thick, with pores about twenty angstroms in diameter. As water coming into the reverse osmosis unit flows over the surface of the membrane under turbulent conditions, a pressure in excess of the osmotic pressure is applied to the concentrate side, forcing water from the concentrate side to the dilute side. Impurities in the feed water are thus concentrated and carried out of the unit by water which does not cross the membrane. A single pass through a reverse osmosis unit usually removes ninety to ninety-nine per cent of all salts originally present in the water.[10] The repulsion of salts is due to interfacial tension effects at the water-membrane interface, and therefore is proportional to the valence of the ions.

The rejection of organics from the reverse osmosis unit is based upon a sieve mechanism and thus varies with the pore size of the membrane. Most reverse osmosis membranes remove nearly all organics greater than 200 M.W.[8] The frequency with which organics under 200 M.W. pass through the membrane is a function of the size and the shape of the molecules. A high percentage, if not all, of bacteria, viruses, and pyrogens are rejected by the reverse osmosis membrane providing it is perfectly sealed and built to high quality standards.

Although installation costs of reverse osmosis units run rather high, the simplicity and effectiveness of reverse osmosis units, as well as reasonable operational costs, make them highly desirable as filtration devices for the preparation of water for use in dialysis. In addition, the volume of purified water per unit of time, as well as the membrane area, can be adjusted according to requirements, making the reverse osmosis apparatus suitable for both home and center dialysis.

In one study conducted at the Koenhavns Kommune hospital, water was fed into the reverse osmosis unit under a pressure of 35kg./cm.^{2} and filtered across a cellulose acetate membrane with an area of 1.8 m.^{2} Over the average six hour period, 500-600 ml./min. of filtrate was obtained that was more than ninety-eight per cent free of all metals and had a conductivity of about thirty micromho (micromho is the reciprocal value of the electrical resistance, measured in ohms and multiplied by 10^6). The filtrate was also free of pyrogens and all known pathogenic strains of bacteria. The cost of operation of the unit averaged 60 cents/1000 gal. of filtrate, exclusive of amortisation, but inclusive of change of membrane once a year.[10]

In summary, chronic dialysis therapy has not reached a point where patients with terminal renal failure can expect to lead relatively normal lives for long periods of time with proper treatment. Thus "quality of life" rehabilitation and "what constitutes adequate dialysis" are pertinent considerations. This is a new level of complexity in terms of the earlier days of "survival" thinking, and the quality of water used in dialysis certainly is a significant factor in these issues. It seems timely to urge that the quality of the dialyzate water warrants consideration as well as other aspects of the overall procedure.

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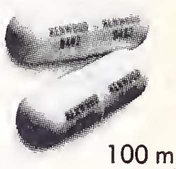

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Surgeons and Wound Management: Historical Aspects

Owen H. Wangensteen, M.D.

Some Uses of Medical History for Surgeons

If all disciplines in our medical schools from Anatomy to Zoology were taught from an historical standpoint, this surgeon believes our students would be better informed than they now are; moreover, with this pursuit, they would acquire a more intimate acquaintance with the nature and mode of progress in all medical disciplines, and in the process gain a sophistication and a more humanitarian view that would stand the young medical graduate in good stead throughout his professional career.

Unfortunately for medical history and for their life's work too, most young students elect to go directly to where the action is. They are more interested in participating in the advance of their discipline than in studying its history. There are medical libraries in this country where the books of the last five years are on the ground floor, and those of prior years sequentially at more inaccessible levels. Our greatest teachers are those whom we have never met, save through the pages of history. Apart from broadening the outlook of the student, I have the feeling that knowledge of the background of a discipline increases the motivation of the student while it sharpens his interest.

Beginnings of Antiseptic Practices in Elective Surgery

When the Latvian surgeon Ernst von Bergmann came to the Ziegelstrasse Surgical Clinic in Berlin (1882), to replace the great surgical teacher, Bernard von Langenbeck, upon his retirement, Bergmann was visited by a former colleague from Riga, who inquired of the Professor, "What is new in surgery?" Replied Bergmann, "Today we wash our hands *before* we operate, rather than *afterward.*" This epigrammatic reply explains in brief the story of surgery's slow emergence from the chaotic state of wound management in the first three quarters of the 19th century up to its beginnings as a scientific discipline in the last two decades of the 19th century.

The Autocrat of the Breakfast Table, Oliver Wendell Holmes (1843), learned from his colleague, Humphreys Storer, who taught obstetrics at the Boston Tremont School, that an unnamed New England physician found he could terminate an epidemic of puerperal fever by washing his hands thoroughly in chloride of lime *after* having been in attendance on parturients with puerperal fever. Holmes' eloquent and forceful exposition of the role of the accoucheur in conveying infection to parturients aroused vigorous opposition from the Philadelphia physicians, Charles Meigs and Hugh Hodge, but did succeed in alerting the medical profession to its own responsibility in the propagation of the dreaded puerperal fever.

It was Ignacz Semmelweis (1847) at the Allgemeines Krankenhaus in Vienna who made the clairvoyant and brilliant observation that thorough washing of the hands with soap and water followed by scrubbing and washing in chlorine water or calcium chloride *prior* to participation in the delivery of parturients—accompanied by immersion of all materials, including instruments, utensils, linens and dressings likely to come in contact with the vaginal canal of the parturient—precluded the occurrence of puerperal fever. In fact, within somewhat more than a year after initiation of his plan (1847), Semmelweis had reduced the mortality of puerperal fever on Professor Klein's Vienna obstetrical clinic from 13.6% to 1.5%. It is true that Semmelweis' thesis did not find ready acceptance, especially among the professor of obstetrics in Austria and Germany. However, he did succeed in persuading his intimate associates in Vienna that his thesis had validity in practice. Carl Rokitansky, the Dean of the Faculty, V. Hebra, a young dermatologist, and Josef Skoda, famed internist, all these ardently supported Semmelweis and spoke out enthusiastically in defense of his practices. Carl Haller, internist and Adjunct Director of the Allgemeines Krankenhaus, reported within a month after Semmelweis initiated his practice of hand washing for accoucheurs (June 1847), "A fresh morning breeze pervades the atmosphere of the hospital that augurs well for the healing arts." Two years later Haller write (1849), "The work of Semmelweis has extraordinary importance for surgery, and must not be ignored by physicians and scientists."

Professional Resistance to Innovation

Resistance to innovation is traditional and has characterized many new developments in medicine. It is well known that some of the keenest opponents of Semmelweis' practices, while condemning Semmelweis publicly, employed his practices in their own clinics. The voice of authority has had far too much sway and influence in our profession. Resolution of the worth of any suggested therapeutic procedure should be achieved by *trial* and cannot be resolved by *argument.*

DR. OWEN H. WANGENSTEEN, Regents' Professor of Surgery, University of Minnesota Health Sciences Center, Minneapolis, Minnesota.

On the occasion of our National Centenary (1876), Lister visited our country to acquaint American surgeons with his antiseptic practices. He obviously made very few converts, for at the first scientific sessions of the American Surgical Association (1882), Gouly, a New York surgeon, remarked in discussing Cabell's presentation, favorable to Lister's practices, "I do not think that Listerism is going to die—it is dead." At its second meeting (1883), some of America's foremost surgeons spoke out against Listerian practices. Dr. B. A. Watson of Jersey City, whose paper favorable to Listerian practices was under discussion, said, in his final reply, that the danger stemmed not from those who had subjected Listerian practices to trial, but "from those who are willing to raise their hands and thank God that they have never witnessed its application or used it." It is a sad story that undoubtedly can be duplicated in many sectors of the history of any medical discipline.

Differences Between the Wound Practices of Semmelweis and Lister

Influenced by the writings of Pasteur (1860-1863), which had been brought to his attention by Dr. Thomas Anderson, Professor of Chemistry at the University of Glasgow in 1865, Lister began his antiseptic practices by placing carbolic acid in wounds. Initially he dipped lint in pure carbolic acid and inserted such dressings into the wounds of open compound fractures. Lister subsequently reduced the concentration to 10%, 5%, and 2.5% solutions. His first publication was in 1867. In 1871 he replaced wound irrigation with dilute solutions of phenol by the use of the carbolic acid spray, a technique that he abandoned in 1887.

Lister's and Semmelweis' Practices

Eventually Lister (1893-1896) capitulated completely to prophylactic antisepsis and abandoned placement of antiseptics into wounds. Such, in fact, had been Semmelweis' thesis and practices for more than four decades. Today, students of the problem who take the time to acquire an intimate acquaintance with Semmelweis' *Die Aetiologie* and with Lister's *Collected Papers* cannot escape the conclusion that Semmelweis is the discoverer and the founder of prophylactic antiseptic surgical practices; that it was Joseph Lister, who, through consecutive studies throughout a long professional life, and with a spirit of dedication to the task, was responsible for adoption by surgeons of surgical antisepsis in their work.

Support for Lister's Work

It was the published experiences of Richard von Volkmann (1874) in Halle, Germany, and of J. N. Nussbaum (1875) in Munich that broke the resistance to the adoption of Listerian practices. Volkmann had written the Curator of the University of Halle that he was closing his surgical wards (December 1872) because sepsis, wound infection and hospital gangrene were rampant in his wards. When Volkmann (1874) and Nussbaum (1875) wrote of their favorable experiences with Listerian practices, the method quickly became widely adopted throughout Germany and surgical sepsis began to disappear in hospitals where Listerian practices were adopted. Robert Koch's magnificent small monograph on pyogenic infections (1878) marked the beginnings of the science of microbiology and served to inform the entire profession that bacteria were pathogenic and the sole source of infection.

Wound Antisepsis: Not a 19th Century Discovery

One of the parables of the New Testament concerns the voyager who fell into the hands of thieves and suffered an open wound in the shoulder area. A good Samaritan eventually happened by and poured oil and wine into his wound and it healed. One frequently hears it said that distillation of alcohol from natural wine was a contribution of Arnold of Villanova, a 13th century theologian and philosopher who sought the universal elixir of life. However, the Old Testament speaks of wine and strong drink, which citations can be found in Numbers, Deuteronomy, Proverbs, Ezekiel and other sections of the Bible.

In *A Surgeon's Mate*, John Woodall (1639), who had advocated use of limes and lemons as a preventative of scurvy before James Lind (1754), recommended placement of turpentine in wounds and was able to report having performed at St. Bartholomew's Hospital more than 100 amputations with not more than 20 deaths.

The great 19th century French surgeon, Auguste Nelaton (1807-73), was a keen and ardent advocate of the use of alcohol in wounds in varying concentrations from 56% to 86%. His pupils, Chedevergene and de Gaulejac (1864), reported upon Nelaton's success with the method in elective operations. Nelaton put large alcohol soaks into such surgical wounds, enough to provoke intoxication, whereby he was able to achieve a hospital mortality in such operations of less than 4%; deaths from wound sepsis constituted half of his overall hospital mortality, certainly an extraordinary accomplishment for that day. In 1842, Malgaigne (1806-1865), in reporting upon the mortality of amputation in nine Paris hospitals, noted an overall mortality of amputation of 39%, 52% for major amputations and a 62% mortality for thigh amputations. Malgaigne insisted that this appalling record should not be submerged in oblivion.

This was, of course, a period of surgical heroics, when surgeons like Lisfranc strove to remove an extremity in a few seconds. However, there is little evidence that time alone was an important factor in overcoming the terrific operative mortality of amputation in that day.

American Civil War (1861-1865): William W. Keen reports that after the first Battle of Bull Run, the Federal troops consumed 36 wagon-loads of whiskey, a therapeutic device which undoubtedly raised the spirits of the soldiers, at least for a brief period. How much more effective management of gunshot wounds would have been if a goodly share of that alcohol had been poured into the soldiers' open wounds.

The *American Medical Times* ran a series of 11 short papers on military surgery which had been delivered as lectures at the College of Physicians and Surgeons, New York, by William Detmold, a consulting surgeon for the Union Army in the Civil War. On February 28, 1863, he alluded to the management of hospital gangrene, stressing the importance of the actual or "the potential cautery," nitric acid. Detmold remarked that hospital gangrene "may have its origin in the rapid generation of a destructive microscopic fungus; some of its phenomena at least seem to me to favor such a theory."

In a letter appearing in the April 11, 1863, issue, Assistant Surgeon General J. J. Woodward indicated that Detmold's idea was not borne out and that accurate examination of the exudate from suppurating wounds with a high magnifying power had "utterly failed to demonstrate any cryptogamic organisms, except the ordinary vibrios, which are to be observed in every decomposing animal substance." The probabilities are that the substance of Detmold's conjecture resided in the last sentence of Woodward's report—ignoring "the ordinary vibrios."

Goldsmith, a Union Army Medical Officer, in a *Report on Hospital Gangrene, Erysipelas and Pyaemia* (1893), gave a glowing account of the efficacy of bromine in the management of war wounds. Of 308 patients with hospital gangrene treated with bromine solutions, eight patients died (2.6%); of 30 treated by other methods, 13 died (43.3%).

Alfred North (1863), writing in the *American Medical Times* (v. 6, pp. 255-58), relates that he treated 60 gunshot wounds complicated by hospital gangrene by debridement and instillation of concentrated nitric acid with only four deaths. He concluded that both hospital gangrene and pyemia were "perhaps of an animal or septic origin." He was able to rid his barracks of both pyemia and hospital gangrene by these therapeutic innovations.

A letter written in a bold and fine hand extolling the use of spirits of turpentine in the treatment of hospital gangrene was addressed to the Surgeon General March 20, 1864, by G. T. Hachenberg, Assistant Surgeon to the U.S. Army. Apparently Hachenberg's letter was never published, but F. H. Hamilton alluded to it in his *Treatise on Military Surgery and Hygiene* (1865, pp. 579-80), a circumstance probably responsible for frequent references to Hachenberg's use of turpentine in the literature of antiseptic wound management.

Anesthesia and Prophylactic Antisepsis—Surgery's Great Inheritances from Two Non-surgical Disciplines

The two significant 19th century innovations that contributed greatly to surgery's advance at about the same time were: (1) anesthesia at the hands of William Morton, a Boston dentist and (2) prophylactic antisepsis by Ignacz Semmelweis, a Hungarian physician working in the obstetrical clinic of Professor Klein at the Allgemeines Krankenhaus in Vienna. General acceptance of anesthesia came almost immediately, the world was so ready for it. On the contrary, resistance to the innovation of Semmelweis' simple remedy of combating puerperal fever was stubborn and protracted.

It may disturb the complacence of today's surgeon, conscious of the many contributions of general surgeons to the growth of several surgical disciplines, to realize that of the great gains that came to surgery in the middle of the 19th century, the contributions of greatest consequence for progress in our discipline, came from two segments of our medical hierarchy not ordinarily regarded as deserving of places in its highest echelons.

The Socially Clean Hand is Not Enough

Wrench, Lord Lister's first biographer (1913, p. 88), relates that the day following Astley Cooper's operation on King George IV for a wen of the King's scalp, Cooper was summoned to the King's bedside. Sir Astley interrupted his dissection and hurriedly replied to the urgent Royal summons. Noting that the King looked upon him with a disapproving eye, when Cooper returned to his quarters he asked his nephew, Bransby Cooper, why he thought the King had not received him more kindly. Said Bransby, "Uncle, you would have done well to have changed your shirt and to have washed the blood off your hands before going to visit the King." It is still a good instruction for young surgeons, who are often likely to happen in on their patients in very informal dress.

Nussbaum, on an earlier visit to Paris, relates (1880) that he had watched Auguste Nélaton prepare a dissection of the superior gluteal artery on two fresh cadavers prior to operating upon a patient with an aneurysm of the gluteal artery. Said Nussbaum, "Nélaton washed his hands with great care after having completed the cadaver dissection. However, he entered upon the operation in the hospital without further preparation of his hands."

Open Wound Management

Fielding Garrison, great American medical historian, and the distinguished English physician, Clifford Allbutt, both condemned the practice of the 14th century surgeon, Guy de Chauliac (1316), who left contaminated wounds open. Distinguished surgeons of the 12th century of the schools of Salerno and Bologna had favored primary closure of wounds. There was no elective surgery in that day and the common wounds, therefore, were those of injury. Today both military and surgeons in civilian practice leave all contaminated wounds open. It was an edict of the Inter-Allied Surgical Conference in World War I.

V. Kern reintroduced the method in 1826 and Robert Liston of the University College Hospital in London (1837, 1841) was one of its strongest advocates. For amputation he reported a mortality of approximately 11%, at a time when the conventional amputation mortality rate in London hospitals varied between 25% and 40%. Liston, who operated with lightning-like speed, removing an extremity quite regularly in less than a minute, ligated the bleeding vessels and applied fresh compresses of cold water to the open wound every 10 minutes until a glaze, occasioned by fibrin deposits, appeared upon the wound. Then the house officers brought the margins of the wounds together with adhesive tape. V. Burow of Konigsberg was able to report a mortality of 6% in amputations employing the same method with the difference that he applied vinegar dressings, a rather ineffectual antiseptic agent, over the open wound.

Debridement

Wound revision, or debridement, traces back to Ambroise Pare (1579), who advised immediate dilatation of gunshot wounds, extraction of all foreign bodies and removal of blood clots and lacerated muscle. For more than two centuries wound excision enjoyed only periodic use. Napoleon's surgeons, Percy (1792) and Larrey (1812), employed the procedure, the latter crediting his teacher, Desault, for instruction in the method. Larrey was such a keen advocate of early amputation for gunshot wounds of the extremity that he failed to lend wound excision a thorough trial. It is to be remembered too that surgical antiseptic practices were yet to come. An unsterile debridement very obviously had its risks.

It was the Russian military surgeon, Carl Reyher, in the Russo-Turkish War of 1877, who first employed wound debridement under antiseptic controls. Moreover, Reyher's prospective study enabled him to determine that only early debridement was effective. When done late, the mortality was invariably more than 60%. Unfortunately, Reyher employed debridement and phenol wound antisepsis simultaneously.

Paul Friedrich (1898) of Leipzig studied wound debridement experimentally in the guinea pig. Unfortunately, he did not employ bacterial cultures, but implanted dust and/or garden soil into wounds. He also was able to show that dead muscle tissue in the wound aggravated the situation.

Well along in World War I (March and May 1917), the Inter-Allied Surgical Conference endorsed primary wound excision with delayed closure as standard method treatment for gunshot wounds, a device that has proved its worth in all subsequent military engagements in which our military surgeons have been involved.

Friedrich's (1898) experimental assessment indicated that debridement was rarely effective after eight hours. In an ongoing study (1972-1973) of the rapidity of peripheral spread of bacteria from wounds contaminated with specific microorganisms in my laboratory *(Staphylococci, Streptococci* and *Escherichia coli* in separate tests), wound excision at 5 to 10 mm distant from the contaminated wound proved very effective in eliminating the infection, if done within five hours. The presence of crushed tissue appeared to accelerate the rapidity of lateral spread of the bacteria. Energized jet irrigation with penicillin at 60 psi compared quite favorably with wound debridement for contaminated wounds up to four hours, but not so in the presence of crushed tissue.

Recognition of Accountability by Surgeons for Operative Mortality

Scattered widely in place and time, prior to general acceptance of surgical antisepsis, there were a few surgeons with extraordinary records of achievement. Alexander Monro I (1737, 1752) reported upon a consecutive group of 14 patients operated upon at the Royal Infirmary in Edinburgh, including femur amputations, without mortality. In 1752, he reported on 99 patients operated upon by himself and others at the same institution with eight deaths. Ninety years later (1842-43) the mortality of amputation at the Edinburgh Royal Infirmary was more than five times greater than that observed by Monro.

Failure of surgeons to accept accountability for their postoperative mortality is apparent in the following: James Paget (1862) tells of a visit of Sir Astley Cooper to a "distinguished foreign surgeon" in Paris, probably Baron Larrey. During the course of a ward walk in the clinic, Sir Astley was told by the French surgeon he had never lost a patient from amputation at the shoulder joint, a favorite operation of Larrey's. The two then visited the "dead house" where a body lay with a recent unhealed wound from amputation at the shoulder joint. Cooper was told that the patient died of pneumonia, not of the amputation. Said Paget, "We must beware of this dishonesty: the more because the temptation to it is so very great and the fraud so easy." Yet on that very page, Paget writes concerning hernia, tracheotomy and trephining: "Every surgeon has lost a large portion of his patients after those operations, but the operations themselves are very rarely the cause of death; the worst that can be said of them is that they do not always save lives. For myself, I have, as yet, scarcely lost a case in true consequence of either of these operations; yet nearly half of those cases I have operated upon for hernia have died, and more than half after tracheotomy, and nearly all after trephining. But these were deaths after operation, not because of them." Such evasive philosophic rationalization obviously fails to contribute to surgery's progress and to the stature of surgeons.

Hospital Reformers

Late in the 18th century Jacques Tenon (1788), the great Paris hospital reformer at Hotel Dieu, and the Englishman, John Howard (1789), did much to alert the profession to the hazards threatening patients in hospitals. Their warnings found renewed expression in the work of Florence Nightingale, who had a keen passion for reform. She insisted upon cleanliness, fresh air, adequate light, good ventilation, pure water and efficient drainage schemes for hospitals. Despite the circumstance that Miss Nightingale lived into the 20th century, she failed to embrace the germ theory of disease, nor did she have much faith in antiseptics. Soap and water were her lodestar. The London surgeon, John Simon (1864), turned sanitarian, applied his surgical knowledge to assess many practical questions relating to hospital size, location and sanitation. Simon defined a "healthy hospital as one that does not, by any fault of its own aggravate ever so little, the sickness, nor oppose ever so little the recovery of persons, who are its inmates." Simon, unlike many surgeons of his day including Lister, knew of the significant work of Semmelweis and sought to bring it to the attention of surgeons and public health officials.

Transition from Chemical to Thermal Antisepsis

In the last quarter of the 19th century in both France and Germany the superiority of heat in the destruction of microorganisms over chemical antisepsis led to replacement of chemical antisepsis with heat for sterilization of instruments, utensils, linens, and dressings. The hands of the surgeons and nurses, and the patient's skin at the operative site obviously made it necessary to retrain chemical antisepsis for these purposes.

Surgeons have over-used the word asepsis. In fact, there is probably no such thing as a microbiologically aseptic wound. The significant experiments of Elek (1956, 1957) have shown that an intradermal injection of as many as 30,000 *Staphylococci* may fail to produce infection, whereas in the presence of a buried suture as few as 100 *Staphylococcus aureus* may produce an abscess.

The introduction of the rubber glove by Halsted (1890), though slow to find general acceptance by surgeons, constituted a very significant contribution to lessening the incidence of wound infection. The last significant, original contribution was that of Flügge and Mikulicz of Breslau (1894), relating to the necessity of surgeons to wear facemasks covering both nose and mouth in order to minimize the possibility of droplet infection during operation.

Lister, who had been at pains to sterilize the air about the operative field, eventually concluded that the air of the operating room was harmless and not a factor in the origination of wound infection. However, a number of current studies, especially those of the English group of surgeon-microbiologists, Blowers, Shooter, and Williams, in consecutive studies to minimize infection by controlling the bacterial count of the air in operating rooms, are especially noteworthy. The shedding of bacteria into the air of the operating room by the presence of many live bodies has long been recognized. Surgeons of Central Europe 50 years ago directed their attention to the floor and maintained a layer of water almost a centimeter deep to trap bacteria as they fell to the floor, a device necessitating the wearing of wooden shoes by the surgeons. The English orthopedic surgeon, Charnley, and others have implemented laminar air flow devices to maintain a stream of fresh air over the operative field, something very difficult to achieve, as Lister admitted in his abandonment of the carbolic acid spray.

Hospitalism

J. Y. Simpson coined the term *hospitalism* (1850) to underscore the large operative mortality attending operations, especially amputations. Simpson found the mortality in the large municipal hospital was considerably greater than that of similar operations in the small country hospital, an opinion that prevailed for almost three decades. The bad air and poor ventilation of hospitals were blamed. The great English Army surgeon, John Pringle, had pointed out in 1753 that hospitals intended for the soldier's improvement in health were often a source of risk for him. As late as 1869, Simpson, in discussing the mortality of amputation in Scotland, said, "A man laid on an operating table in one of our surgical hospitals is exposed to more chances of death than our English soldiers in the field of Waterloo."

During his Bellevue days in New York in the 80's Halsted operated in a tent, believing the hospital unsafe for operations, a practice reminiscent of the field conditions in the American Civil War.

Conflict Between Theory and Experience

One manner of classifying surgeons is with reference to judgments concerning beliefs and practices: There are those who believe what they see and those who see what they believe. There is a very significant difference in this simple differential. Ambroise Pare supported the thesis that suppuration encouraged healing. However, when Pare observed that turpentine in wounds stopped suppuration he abandoned use of "suppuratives" and clung to topical wound antisepsis. Dominique Larrey, Napoleon's great military surgeon, similarly believed in suppuratives. When he noted that alcohol dressings stopped suppuration, he abandoned the use of alcohol, a thesis to which his son, Hippolyte, subscribed as well as Alfred Velpeau. They were appointed members of a Commission (1866) to adjudicate for the French Academy of Surgery the validity of the thesis of Nelaton and of Marc See that topical alcohol was good for wounds of elective surgery. This Commission went along with the thesis of the elder Larrey and gave the proposition of topical alcohol a vote of no confidence.

Theories of Infection

Theories of infection date back to Fracostoro, a contemporary of Vesalius. Fracostoro wrote his great poem on syphilis in 1530, but his greater work (1546) concerned the nature of contagion. He recognized that contagion could be transmitted through the air but he recognized also the importance of the hand, clothing and other objects communicating infection; smooth hard surfaces like stone, Fracostoro believed, did not harbor or communicate infection.

Jacob Henle (1840), a pupil of Johannes Muller of Berlin, wrote a very important tract on contagion and miasmas and proposed the thesis that bacterial infection was responsible for miasmata. Unfortunately, Henle did not pursue this promising prospect. In fact, Metchnikoff relates that during his stay (1865) with Henle in Gottingen Henle never alluded to his earlier significant work. Bacteria had been described in a fine two-volume work by Ehrenberg (1838). In fact, Leeuwenhoek (1674) observed microscopic organisms around his own teeth and in his saliva. He, of course, had no intimation that the observed microorganisms were responsible for disease. Almost two centuries were to intervene before Schwann (1837) and Cagniard Latour (1838) first brought forward cogent evidence that fermentation and putrefaction had their origins in microorganisms, to which the work of Klencke (1843) and Davaine (1860) lent substantial proof before the significant papers of Pasteur (1860-63), and the morphologic and cultural studies of Koch (1878) brought proof to the thesis that bacteria were the sole cause of infection. Even so, the thesis of John Hunter that irritation and irritability were the primary causes of inflammation continued in textbooks of pathology and surgery well into the 20th century.

The Role of the Surgeon in Management of Surgical Infection

Prior to chemotherapy and antibiotics, the surgeon remained essentially a pus evacuator. His function was to drain an abscess. Debridement and wound revision, leaving the wound open, were the surgeon's chief weapon in dealing with contaminated wounds. Lister had stressed placement of antiseptics (phenol) in wounds. With the transition from chemical to thermal antisepsis in the last decade of the 19th century, surgeons became less convinced of the thesis that placement of antiseptics in wounds was a proper procedure. However, with World War I came a strong reversion to wound antisepsis with chlorite that Semmelweis had used more than six decades earlier. Additionally, many surgeons with military experience in World War I were apparently convinced that cellulitic infections could be drained by promoting opportunity for escape of wound exudate by long incisions. I have seen the utter futility of such practices. Fleming (1919), a keen microbiologist and student of wound infections in World War I, wrote that placement of antiseptics in wounds did far more harm to the tissue than to the bacteria.

In fact, until sulfanilamide (1935) came along, the surgeon's attempts to control streptococcal infections were completely ineffectual, in fact actually harmful. Today with employment of sulfonamides and/or penicillin or other antibiotics, the life-threatening streptococcal infections of erysipelas, puerperal fever and scarlet fever have come under control. Prior to the availability of these agents, throughout surgery's long history, there had been no effective remedy of any kind for any of these cellulitic infections.

Summary

Several competent students of wound healing have said that despite the great accumulation of biochemical knowledge bearing upon the problem, no agents have been found that accelerate wound healing. On the contrary, definite progress has been made over the centuries by the surgeon learning to combat wound infection. He was for a long time only a pus evacuator; he could drain an abscess. Through employment of open wound management and debridement, the surgeon improved his accomplishment. Topical instillation of antiseptics into wounds did play a useful role in overcoming hospital sepsis in the last quarter of the 19th century. Prophylactic surgical antisepsis, originated by Semmelweis (1847), remains today the very marrow of current-day wound management, especially for elective surgery. Preventive aspects of medicine are destined to affect every medical discipline and to become more and more an important activity for surgeons too. The Nobel Laureate, Ivan Pavlov, said (1902), "Microbiology has succeeded in welding the profession of medicine into an entire and coherent whole." We may look to it for future significant additions to complement the surgeon's role in the control of wound infection.

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The AMA Commission on Emergency Medical Services and the Emergency Medical Technician

Eugene L. Nagel, M.D., Chairman and William E. Burnette, Secretary

The AMA Commission began in October, 1966 with representatives from 10 component specialty societies. Today there are representatives from 13 specialty areas: ACS,[1] ACEP,[2] ASA,[3] UA/EMS,[4] AMA,[5] AHA,[6] AAOS,[7] APHA,[8] ACP,[9] DOT,[10] USPHS,[11] AAFP,[12] and AAP.[13]

The Commission is charged with "identifying and coordinating the implementation of, programs with the specialty medical societies as they relate to professional education and educational standards and training programs for allied emergency personnel."

The development of an organized emergency care system, pre-hospital, has its origins in the house-call of physicians, in American Red Cross first-aid and in military medicine. The concept of emergency care extending into *medical* care and not just first aid began with corpsmen, pharmacist mates and specially trained *paramedics* who delivered critical care in the field. By the early '60's the attention of the public, and medicine, concentrated on giving early medical treatment to the critical victim while still in the field. By 1963, Day[14] had evolved a method of continuous monitoring and early definitive treatment for the high risk coronary patient. It was an easy step for Pantridge,[15] Lareng[16] and the Russians to take these methods into the field. Thus, *mobile* coronary care was added to Day's[14] original in-hospital method. The physician-directed unit was brought to the United States by Grace[17] (New York) and Warren (Ohio). Nagel[18] and Lareng[16] first experimented with telemetry and it was their idea that physician direction of technicians could be carried out by hospital based physicians using special communication facilities.

At this time, 1967, the training of emergency care personnel was a local affair, largely disorganized, and strengthened by Committee on Trauma (American Academy of Orthopedic Surgeons) courses on emergency care. To date approximately 15,000 persons have been trained in emergency care through these courses.

By 1966 it was clear that emergency care personnel should be trained in some standardized manner which would imply that minimal requirements be met. In 1969 the Department of Transportation 81-hour course was approved and made available to all states.

The testing of the EMT or emergency medical technician candidate should obviously be done in some uniform manner across the country if the classification is to have meaning. By 1/20/70, 14 organizations agreed to sponsor the Registry for Emergency Medical Technicians.[19] The Commission in its meeting of June 4, 1970 supported the formation of the Registry. In its first examination given on October 29-30, 1971, the Registry tested 1,520 candidates with a failure rate of 3%. The first written test was admittedly less than optimal; but by 1974, approximately 35,000 individuals took the examination with a failure rate of 30%. The questions have been tested for validity, practical application, and clarity. The practical examination remains a problem but a special committee has been given the immediate task of preparing audio-visual materials designed to train faculty to administer a practical examination in a fair and uniform manner.

The term "EMT" is commonly associated with a basic level of care but should not be so designated. Instead it should represent a health specialist involved in emergency health delivery in the field or pre-hospital. It is obvious that there are several levels. Under consideration by the Registry is a new term for advanced technicians, "EMT-Paramedic" which would require approximately one year of study. Still to be decided is the study involved in an Associate Degree (two years).

At the most recent meeting of the Commission on October 1, 1974, a special group of consultants was assembled, including Registry; Health, Education and Welfare; Department of Transportation; and representatives for the AMA's Allied Medical Professions and Service Department and the Department of Health Manpower. This group recommended, unanimously, that the proper brief be submitted, recognizing the EMT as "an emerging health occupation." If this is approved, the way is clear for a multi-discipline conference to be convened sometime in the late Spring of 1975 to define the goals, knowledge, skills and training requirements inherent in the advanced level EMT.

The significance of this is to possibly place EMT among the 25 other allied health specialties already recognized, including respiratory therapists, laboratory technicians and radiologic technicians.

DR. EUGENE L. NAGEL and WILLIAM E. BURNETTE are Chairman and Secretary, respectively, of the Commission on Emergency Medical Services of the AMA.

What began as an experiment in the mid- '60's is well on its way to being an established member of a number of esteemed health specialty occupations. We, on the Commission, extend our congratulations to the EMT's, their associated physicians, teachers, organizations and hospitals across the country. Joining us in this salute are the many pioneers, both individuals and organizations, who have worked toward improving emergency health care in America.

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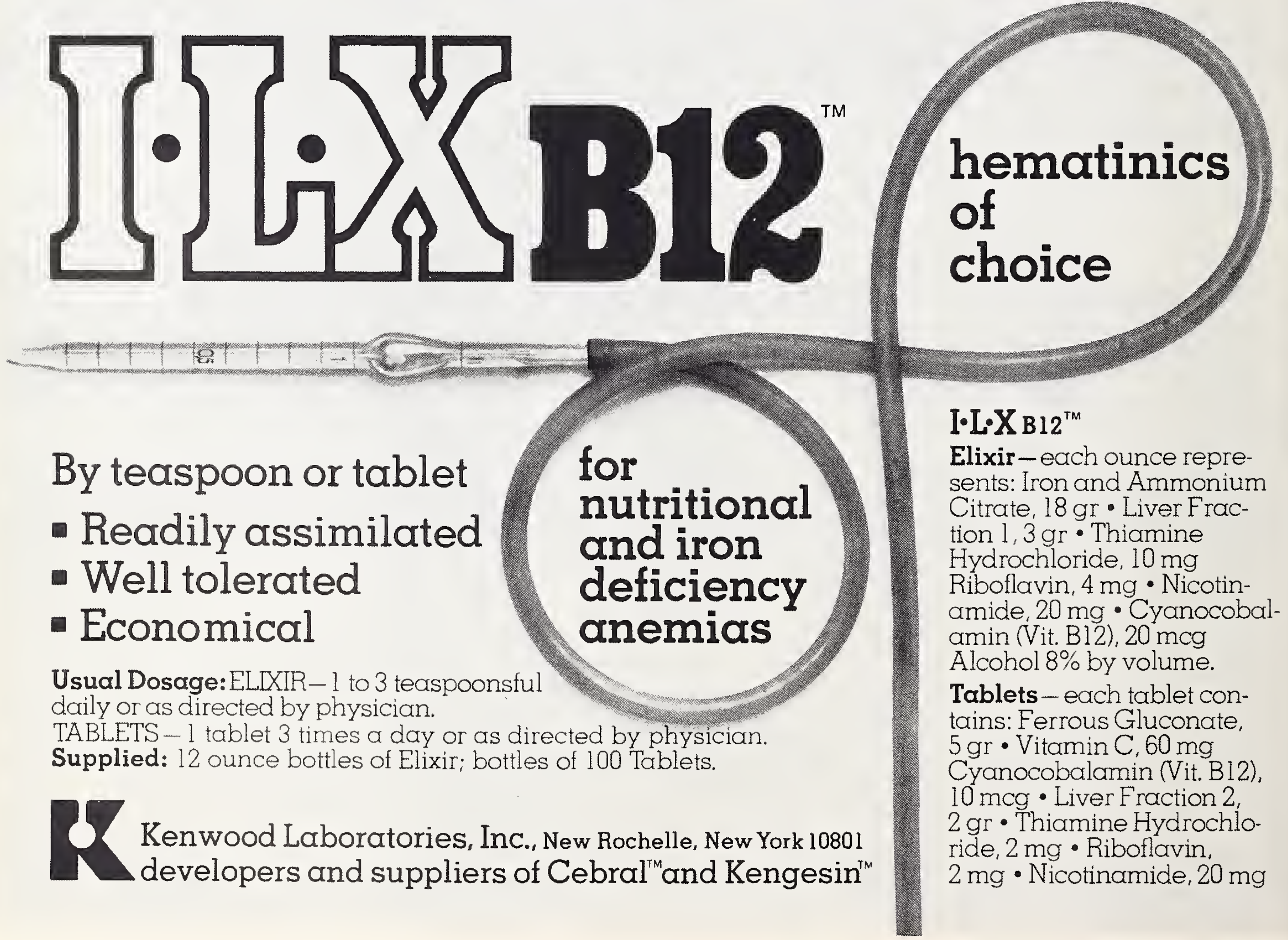

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Medicine and Pragmatism in William James

Patrick Romanell, Ph.D.

This paper takes seriously that William James was a physician by training by showing how his medical way of thinking is reflected in his pragmatism as a philosophy. The paper points out that: the primacy of the practical in James coincides with what ultimately counts in medicine; the model of his pragmatic method is found in standard medical procedure, and his conception of truth is based in part at least on reasoning from analogy with medicine.

The principal object of this study is to consider briefly the unsuspected but unique influence of medicine on the formation of that variety of pragmatism peculiar to William James (1842-1910), the most articulate representative of the pragmatic movement, which reached its peak in American philosophy in the first quarter of our century. In order to appreciate, though, the bearing of his medical way of thinking on his pragmatist views, it would be a good idea to make a few introductory remarks on the scope of my essay as compared with some recent writings on James.

To begin with, in contrast to what has hitherto been regarded as only incidental to his philosophy, the present paper takes seriously that James was a physician by training. It does so on the ground that a careful look into James the physician will illuminate considerably James the pragmatist in philosophy. In addition, apropos of this, the paper also takes seriously what James himself took seriously, namely, that closer attention must be paid to "the personal and aesthetic factor in the construction of philosophy" (*Essays in Radical Empiricism*, 1912, p. 279). Accepting his serious recommendation, what does it signify?

According to James, philosophy is simply a collective name for *individual* philosophies. Hence *a* philosophy is not just an abstract logical system of bloodless categories but a living product which manifests concretely *a* philosopher's own style of thinking on the scheme of things as a whole. Just as William James learned from his early studies in painting and from close contact with his literary brother (the novelist Henry James) that every artist has his own mode of expression, so (by implied extension) every philosopher has his own style of thinking. Before we show, however, the medical provenance of our author's insight into the makeup of any system of philosophy and take advantage of his insight by applying it to James himself, we must dispose of a recent problem as to the proper nomenclature for his philosophical standpoint.

Ironically enough, as a consequence (in part) of James' militant appeal to concreteness of intellectual life and his salutary revolt around the turn of the century against all abstractionism in philosophy, several American publications on his life and thought appearing during the previous decade of the anti-Establishment have seemed so eager to update him that he emerges more like a post-war existentialist than a pre-war pragmatist. One pretty obvious reason for the sudden change of banners is cultural rather than strictly philosophical. Pragmatism as a philosophic name has evidently suffered of late in this country what it used to suffer abroad. It has been found, once more, guilty by association with so-called American practicality, crudely interpreted in the worst sense.

With all due respect to contemporary European existentalism for its timely shift of horizon from the abstract to the concrete in matters philosophical, nothing is really gained philosophically by remaking James the pragmatist in the image of a pre-existentialist. For one thing, while American pragmatism puts the accent on men's positive possibilities of succeeding in life, European existentialism stresses their negative possibilities of failing. For a second thing, the recent updating of James is another example of an old trick in the history of philosophy. Being himself a master in psychology, James anticipated it over two generations ago with respect to the career and fate of pragmatism and its theory of truth (Cf. *Pragmatism*, 1907, p. 198). For a third thing, the strategy itself of updating as applied to any philosopher can only boomerang in the end. What will happen to James and the existentialists themselves, for that matter, when this current movement itself goes out of fashion? Fortunately, unlike umbrellas, philosophies worth their salt don't fade with the passage of time, and this perennial quality of theirs applies just as much to pragmatism as to existentialism, whether we take to either of them or not. In short, a history of the ups and downs of the "isms" in philosophy would tend to be more amusing than instructive.

In this connection, to complicate matters with another "ism," I am not forgetting that for his own

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strategic reasons James came to prefer the term "radical empiricism" for his general philosophy. Even so, I for one still think that his original term "pragmatism," properly understood as a humanistic and melioristic perspective based on a practical sense of life (in the best sense), conveys exactly not only where he stands philosophically but also where he resides culturally. Viewed culturally, James the pragmatist represents a model example for the Anglo-American way of life at its best. His robust faith in "a world of *promise*" (*Ibid.,* p. 108) is the epic faith of America writ philosophically.

If the first reason that our author speaks authentically for pragmatism has to do with his having been reared as an itinerant Yankee from Manhattan in ante-bellum America, the second has to do with his having been trained as a restless physician at Harvard Medical School, where he received an M.D. in 1869, his only earned degree. Obviously, the cultural pragmatism of James the American and the medical pragmatism of James the physician reinforce each other and coalesce in the mind of James, the American pragmatist *par excellence.* This takes us to the core of my discussion.

The bare details of James' medical background are generally well known, and they are available in Ralph Barton Perry's respected and faithful biography, *The Thought and Character of William James* (1935). Suffice it to restate that our author not only lived in the Golden Age of American Philosophy, he lived also during the early part of the Golden Age of Modern Medicine. To the first he contributed greatly with his popular version of pragmatism and, though to the second he did not contribute anything of historical importance (except indirectly via psychology), what he learned and borrowed from medicine eventually got incorporated, consciously or unconsciously, in his philosophy.

As should be expected, there are many medical references and allusions in his versatile output, such as his vigorous protest against medical materialism in the chapter on "Religion and Neurology" which opens his classic work in the psychology of religion, *The Varieties of Religious Experience* (1902). Space does not permit even a mention of them, but there is a clear-cut passage in *Pragmatism* (p. 263) which is worth quoting in its entirety for the unusual medico-biographical light it throws on his critical attitude towards purely verbal solutions in medicine:

> "At a surgical operation I once heard a bystander ask a doctor why the patient breathed so deeply. 'Because ether is a respiratory stimulant,' the doctor answered. 'Ah!' said the questioner, as if that were a good explanation. But this is like saying that cyanide of potassium kills because it is a 'poison,' or that it is so cold tonight because it is 'winter,' or that we have five fingers because we are 'pentadactyls.' These are but names for the facts, taken from the facts, and then treated as previous and explanatory."

Quite apart from such an obvious medical passage from our author, what are some of the most telling of the subtler indications of the influence of James the physician on James the philosopher of pragmatism?

In the first place, implicit in any philosophical set of doctrines is a certain conception of philosophy underlying them. As already anticipated, James has an individualistic conception of philosophy itself, but what exactly is its medical source? Like the post-Kantian Fichte a century before him, our author believes that the kind of philosophy one *has* depends on the kind of individual one *is.* To exploit here an instance of James' sense of humor in a medical context: the life of a philosophy depends on the liver! All systems of philosophy have a special twist to them, reflecting the hidden propensities of their authors. Every philosophy expresses the individuality of its maker. Now, the medical term for such phenomenon is "idiosyncrasy" (*Ibid.,* p. 8), a term (from the Greek) which literally means "individual temperament," the latter (from the Latin) being its closest equivalent. Both terms originally refer to the "mixture" of humors or fluids, the basic concept of ancient Greek medicine. As this concept used to be considered the determining factor in men's *health,* so James is submitting that individual differences in temperament constitute the determining factor in men's *philosophies.*

In the second place, a corollary of this medically grounded approach to the individuality of philosophies is the well-known Jamesian distinction between "two types" of minds: the "tender-minded" and the "tough-minded," that is, those with a principle-loving temperament and those with a "fact-loving temperament" (*Ibid.,* pp. 11-12, 69), respectively. This dichotomy of two temperaments in James, however anachronistic after Pasteur, definitely echoes the "four humors" in Hippocratic medicine and the "four temperaments" in Galen. James' use of this temperamentalist dichotomy not only is evidence that he is drawing on his own past as a student of medicine on the eve of microbiology, but it also shows that he is drawing on the past of classical medicine. If our author were living today, his medical specialty would be psychiatry.

In the third place, let us apply his tool of individual psychology to his case in particular. Even though James' own temperament makes him lean more towards the tough-minded empiricist than the tender-minded rationalist, he actually offers pragmatism as "the mediating way of thinking" (*Pragmatism,* p. 40) between the two extremes. Here again his medical background is subtly reflected in his pragmatic temper and role as mediator. The whole notion itself of mediating or balancing extremes in Jamesian thought stems originally from the humoral theory of health and disease in Hippocratic medicine, which views health as a *balance* of the body's humors. What *mediation* is to the intellectual side of life, *moderation* is to its moral. Moderation is the Golden Rule of health, the cardinal virtue of which is prudence. Hence the medical ethics of prudence and the utilitarian ethics of pragmatism coincide in James the physician-philosopher.

In the fourth and last place, according to Jamesian pragmatism, what ultimately counts in anything we think or do in life is the attainment of practical results. This pragmatic criterion of value is precisely what counts, above all, in medicine. It is the final yardstick of every doctor, standard in all medical practice. Whether general practitioner or specialist, internist or surgeon, every doctor sooner or later asks the same question: Will such and such method of treatment or formula *work*, therapeutically?

Pragmatism as a way of thinking is so natural to medical practice that it may be said to constitute the unwritten philosophy of medicine. Moreover, it is not only natural to a practicing physician, it is equally so to a typical patient. Otherwise, why should patients change doctors? James must have realized from his own medical experience that, of all the fields of human endeavor, the one where the pragmatic method is absolutely indispensable and irreplaceable is precisely the medical field itself. Actually, however, he applied the pragmatic criterion primarily to metaphysical and theological problems. He was attacked left and right for his stand as a religious pragmatist, but he would have been on much safer ground had he stuck to his guns as a medical pragmatist.

This is what makes me suspect that our author got his earnest conviction about the applicability of the pragmatic method to philosophical and religious questions from its unquestionable value in settling medical disputes. At any rate, it is in the medical field, faced every day with life and death issues, that "the criterion of the practical differences that theories make" (*Ibid.,* p. 156) is not just an academic question, especially since its timely use could make all the difference in the world.

The ever-fascinating thing to me about the development of James the philosopher is how, via some process of mental osmosis, James the physician absorbs the unwritten philosophy of medicine and makes it the written philosophy of pragmatism by generalizing the pragmatic test for *medical* truth into the proper test for *all* truth. The net result of such process may be illustrated by the ingenious way he handles pragmatically two of the most difficult problems of philosophy: the problem of causality and the problem of truth.

As to the first, James acknowledges that the venerable category of cause inherent in common sense and refined in classical science has been under heavy attack ever since David Hume seriously questioned its logical status over two hundred years ago. Nevertheless, James sides with common sense, his stated reason being that "the search for causal influences" (*Ibid.,* p. 180) in the natural world suffices for all practical purposes in life. But the unstated reason for his siding with common sense against Hume is more crucial and should be quite obvious, once it is remembered that James is a medical man in mentality. As he cannot as a physician really eliminate the idea of the etiology of disease from his mind, he can hardly do so for the etiology of other phenomena. The whole concept of causality may be dead in some sophisticated areas of modern physics, but it is still alive in modern medicine. For, given the practical nature of the latter in comparison with the former, the science and art of medicine cannot function properly for long without the aid of the cause-effect relationship.

Turning next to James' manner of treating the problem of the meaning of truth, we come perhaps to the best single piece of evidence that he thinks in medical terms. How does he answer the eternal question: What is truth? Briefly stated, James holds that the pragmatic criterion of consequences serves not only to verify particular claims to truth but to define truth itself as well. Putting it in Biblical language, just as the difference between a good and a poor tree is determined "by their fruits" (St. Matthew 7:20), so is the difference between truth and error. Furthermore, James concurs with traditional epistemologists that the truth of an idea consists in its special relationship to reality, but he takes issue with them as to what that relation signifies. Whereas for traditional epistemology the agreement of ideas with reality signifies that true ideas *correspond* to reality, for James the agreement in question signifies that they are *suited* to reality, in other words, that in the long run true ideas are "profitable to our lives" (*Ibid.,* p. 75).

James is quite conscious of the oddness of his unorthodox conception of truth, yet he quickly defends it with a medical analogy which, however odd, is unmistakable proof that his whole epistemology is based in part at least on reasoning from analogy with medicine. "Just as certain foods," he argues, "are not only agreeable to our taste, but good for our teeth, our stomach, and our tissues; so certain ideas are not only agreeable to think about, or agreeable as supporting other ideas that we are fond of, but they are also helpful in life's practical struggles" (*Ibid.*, p. 76). After which he adds, "This sounds very like a definition of truth" (*Ibid.*, p. 77). Whose?

The foregoing mode of conceiving truth by analogy with dietetics in James the pragmatist in the theory of knowledge doubtless reflects James the pragmatist in the theory of medicine. For it is precisely in the medical context that theoretical questions of a practical nature arise as to whether, to recall the immortal example of Hippocratic fame, cheese agrees with all of us, that is, whether it is conducive to health. If it is, that makes it 'true' as far as medicine goes, and James' Darwinian defense of his Hippocratic-sounding physiological theory of truth amounts essentially to this: What is good enough for health is good enough for truth. Moreover, further evidence that he takes seriously his analogy between health and truth as life processes is found in his statement that truth "is *made*, just as health, wealth and strength are made, in the course of experience" (*Ibid.*, p. 218).

Before closing, I must add a word of caution, however. The fact that James employs medical ideas and analogies throughout his writings to expound his pragmatic views in philosophy does not necessarily signify or imply a *conscious* borrowing on his part of convictions and thoughts derived from medicine. But neither does that *per se* necessarily negate the actual influence of his medical heritage on his philosophical thought. He himself mentions a friend of his whom he regards "as a genuine pragmatist, but as a pragmatist *sans le savoir" (Ibid.*, p. 280). By the same token, even if James were a medical pragmatist without his knowing it, he would still be one anyway. After all, as that controversial medical detective of the mind named Freud would remind us, an unconscious influence itself is no less influential for being such, and in fact may be more so.

Like John Locke, pragmatism's famous forerunner who until recently was another influential philosopher neglected as a physician, James was aware that an active career in medicine was closed to him for reasons of poor health. This awareness of his probably explains his understandable reluctance to speak in his own right as a member of the medical profession, and one unfortunate consequence of such is the undue reluctance hitherto of the students of his life and thought to consider his medical background as important to the making of his philosophy.

And yet, if I may be permitted an educated guess as a final thought, it could well be that, like Theodore Roosevelt, who compensated for his poor health during his boyhood by roughing it and advocating the strenuous life, William James found the intellectual "equivalent" of medical practice (to use a Jamesian term) by formulating its philosophy on paper, thereby contributing a *philosophia medici* for the benefit of his medical colleagues. In any case, Jamesian pragmatism is in general theory what medicine is in practice, and it is to be hoped that some day Doctor William James will have the place he deserves in the history of American medicine corresponding to the one he has earned in the history of American philosophy.

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main purpose of drug information for the patient is to get his cooperation in following a drug regimen.

Preparation and distribution of patient drug information

We would hope to amass information from physicians, medical societies, the pharmaceutical industry and centers of medical learning. The ultimate responsibility for uniform labeling must, however, rest with the Food and Drug Administration. There is nothing wrong with this agency saying, "this information is generally agreed upon and therefore it should be used," as long as our process for getting the information is sound.

Distribution of the information is a problem. In great measure it would depend on the medication in question. For example, in the case of an injectable long-acting progesterone, we would think it mandatory to issue two separate leaflets—a short one for the patient to read before getting the first shot and a long one to take home in order to make a decision about continuing therapy. In this case, the information might be put directly on the package and not removable at all. But for a medication like an antihistamine this information might be issued separately, thus giving the physician the option of distribution. This could preserve the placebo use, etc.

It is in the distribution of patient information that the pharmacist may get involved. As professionals and members of the health-care team and as a most important source of drug information to patients, pharmacists should be responsible for keeping medical and drug records on patients. It is also logical that they should distribute drug information to them.

Realistic problems must be considered

We have to expect that the introduction of an information device will also create new problems. First, how can we communicate complex and sophisticated information to people of widely divergent socioeconomic and ethnic groups? Second, what will we say? And third, how can we counteract the negative attitude of many physicians toward any outside influence or input? Hopefully the medical profession will respond by anticipating the problems and helping to solve them. Assuming we can also solve the difficulty of communicating information to diverse groups throughout the United States, our remaining task will be the inclusion of appropriate material.

What information is appropriate?

In my opinion, technical, chemical and such types of material should not be included. And there is no point in the routine listing of side effects like nausea and vomiting which seem to apply to practically all drugs, unless it is common with the drug. However, serious side effects should be listed, as should information about a medication that is potentially risky for other reasons.

Other pertinent information might consist of drug interactions, the need for laboratory follow-up, and special storage requirements. What we want to include is information that will help increase patient compliance with the therapy.

Positive aspects of patient drug information

Labeling medication for the patient would accomplish a number of good things: the patient could be on the lookout for possible serious side effects; his compliance would increase through greater understanding; the physician would be a better source of information since he would be freer to use his time more effectively; other members of the health-care team would benefit through patient understanding and cooperation; and, finally, the physician-patient relationship would probably be enhanced by the greater understanding on the part of the patient of what the physician is doing for him.

Only the doctor can remove that fear by 20 or 30 minutes of conversation.

I'm not suggesting that we withhold any information from the patient because, first of all, it would be totally dishonest and secondly, it would defeat the very purpose of the insert. I do think that a patient on the birth control pill should know about the incidence of phlebothrombosis.

If you're going to tell a patient the incidence of serious adverse reactions, then you have to tell him that a concerned medical decision was made to use a particular medication in his situation after careful consideration of the incidence of complications or side effects.

Emotionally unstable patients pose a special problem

There are patients who, because of severe emotional problems, could not handle the information contained in a patient package insert. Yet if we are going to have a package insert at all, we just can't have two inserts. I think we might simply have to tell the families of these patients to remove the insert from the package.

Legal implications of the patient package insert

Just what effect would a patient package insert have on malpractice? We could try to avoid any legal implications by pointing out that the physician has selected a particular medication because, in his professional judgment, it is the treatment of choice. For instance, you can't tell everyone taking antihistamines not to work just because a few patients develop extreme drowsiness which can lead to accidents. And what about the very small incidence of aplastic anemia rarely associated with chloramphenicol? If, based on sensitivity studies and other criteria, we decide to employ this particular antibiotic, we do so in full knowledge of this serious potential side effect. It's not a simple problem.

How do we handle an insert for medication used for a placebo effect?

With rare exceptions, physicians no longer use medications for a placebo effect. This question does raise the issue of how a patient may react to receiving a medication without a package insert.

Preparation of the package insert

The development of the insert ought to be a joint operation between physicians, the pharmaceutical industry, the A.M.A. and the F.D.A.

I view the A.M.A.'s role as a coordinator or catalyst. It is the only organization through which the profession as a whole, irrespective of specialty, can speak. It has relatively instant access to all the medical expertise in this country. And it can bring that professional expertise together to ensure a better package insert. The A.M.A. can work in conjunction with the industry that has produced the product and which is ultimately going to supply the insert.

I don't think we should rely, or expect to rely, on legislative committees and their nonprofessional staffs to make these decisions when it is perfectly within the power of the two groups to resolve the issues in the very best American tradition—without the government forcing us to do it. I think the F.D.A. has to be involved, but I'd like them to become involved because they were asked to become involved.

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Conceptual Aspects of a Patients' Bill of Rights

Joseph Margolis, Ph.D.

The details of an adequate patients' bill of rights are obviously quarrelsome and extremely difficult to formulate with precision. The recent effort at a model bill of patient rights, by Professor Annas and Dr. Joseph Healey, may well be the most comprehensive and coherent version that we are likely to have for some time.[1] It may, therefore, be more useful to step back and consider what we are doing in formulating such a bill of rights—why, and with what justification—than to tinker with the terms of their particular version or of any other. Or, at any rate, it may be useful to generalize before reviewing any details. There are, of course, a good many similar efforts in other areas, for instance, the various manuals published by the American Civil Liberties Union for inmates in American prisons or for those inducted into the armed services; or Nicholas Kittrie's attempt at a model bill of rights for patients in mental institutions, particularly those confined by law.[2] The larger issue may, in fact, afford us a better grasp of the details of competing bills, although to make a gain here is to retreat to conceptual issues.

The fundamental notion of a right is that of entitlement regarding one's own behavior and regarding a justified and coordinate claim obligating another. This is not a non-controversial definition by any means. Annas and Healey, for example, mention Holland's definition of a right as a specimen of at least one sort of theory: "a capacity residing in one man of controlling, with the assent and assistance of the State, the actions of others."[3] But Holland's definition is defective in at least three critical respects that decisively bear on our present question. First of all, it defines rights in terms that require the participation of the state; but we may suppose that a model bill of patients' rights would be desirable if the hospital community would subscribe to it even if it should prove difficult or impossible to have it embodied in Federal statutes or comprehensive throughout the fifty states. Secondly, it admits as a right only those determinate powers to enjoin another that the State is prepared to support; hence, it might well sustain any existing doctor-patient relationship as actually embodying patients' and doctors' rights in spite of the very sort of criticism the provision of a model bill is intended to focus. Thirdly, it acknowledges no basis for justifying the existing distribution of rights or for correcting it; hence, it affords no conception at all of the rationale of rights, *a fortiori,* of the rationale of patients' rights.

This is a quibble but an important one. For, *if* we understood rights in terms of the justification of claims, we should be forced to concede that rights cannot be confined to positive rights—say, legal rights "created by the Constitution, by legislative action, or by prior court determination" or rights that, "because of my relationship with another party . . . a court of law would [probably] recognize . . . as my legal right"—the concept must cover as well what we are entitled to claim obligates another, that, conceivably, *the law ought to incorporate.*[4] Obviously, the provision of a model bill makes no sense at all unless the concept of rights is not confined to positive law or to the changing practice of positive law. And yet, as soon as we raise the question in this way, we find ourselves in a quandary: those who oppose the institution of a model bill like the AHA's or Annas and Healey's may be prepared to argue that the existing doctor-patient institution properly embodies the rights of both.[5]

So the provision of a model bill of patients' rights partly depends on our conception of the service that medicine renders and partly depends on our conception of the grounds on which rights in general, and patients' rights in particular, may be claimed and defended. Emphasis must be placed on the *service* that medicine renders, not merely on the nature of health and disease: the point is that whatever precision may be claimed for the definition of health and disease, for the diagnosis and prognosis of disease states and treatment plans, the question of patients' rights and doctors' duties bears on the medical *arts,* that is, on the institutionalized relationship between patients and doctors within which and within which alone ethical, legal, prudential, and related concerns arise. There is no doubt that the definition of health and disease is itself subject to larger speculations about human values.[6] Hence, questions of medicine and questions of rights converge in two distinct ways: first, because the norms of health and the defense of rights are jointly concerned with the values of human existence; second,

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JOSEPH MARGOLIS, Ph.D., is Professor of Philosophy at Temple University, Philadelphia. This paper is based on Professor Margolis' presentation at the University of Connecticut Health Center as part of the program "Focal Issues for the Public and the Professionals—Forum on Human Values and Health Care." The program on October 16, 1974, was "The patient as Participant in Health Care—Responsibilities, Rights, and Reasons." The Forums are supported by a grant (CHC-G-7404) awarded by the Connecticut Humanities Council under the auspices of the National Endowment for the Humanities to Stuart Spicker, Ph.D., Forum moderator and director of Humanistic Studies in Medicine in the School of Medicine. The October Forum was co-sponsored by the Connecticut Council of Churches.

because medical practice and the exercise of personal rights ought, on any rational view, to be compatible—but may, in fact, conflict. A single illustration drives the point home. An ad hoc committee of the American Medical Association, under the leadership of Dr. Henry Beecher, arrived some time ago at a definition of irreversible coma that, relatively uncontroversially, may be supported as a sufficient condition for death.[7] The report of that committee, however, also theorizes about the interrelationship of vital functions involving the heart, the lungs, and the brain (as those bear on death) and advocates, for instance, that "spontaneous respiration" be judged no longer to obtain if, "when the respirator is turned off for three minutes, there is 'no effort' on the part of the patient to breathe spontaneously."

The specification of at least some sufficient conditions of death cannot but be uncontroversial, in the sense that some criteria at least, however impractical for borderline cases, surely are beyond dispute. What is not beyond dispute, however, is whether it is justified to *pronounce* someone dead whose EEG is not flat but would undoubtedly be flat if mechanical aids for the heart and/or lungs were removed or removed for more than a few minutes; or whether it is justified to *allow* or *force* someone to die by removing such aids or removing them for more than a few minutes. These questions involve the medical arts, since they involve the use of our technology to sustain or to end living processes under conditions in which interested human beings are prepared to dispute the justification of alternative practices and alternative definitions of death *within* a range our technology may affect; for that very reason, they generate questions of patients' rights as well.[8] Alternatively put, theories about a patient's rights and about whether they have or have not been served inevitably subtend substantive questions about correct medical practice. Where those may be controversial, it is hopeless to appeal to a doctrine of rights: either it will favor, tendentiously, a view in dispute or else its confirmation will itself depend on resolving that dispute or else it will have no bearing on it.

To pose these difficulties is to see at once how easily not only disputes about the norms of health and disease but also about the norms of medical practice and the rights of patients become subject to doctrinal and ideological differences. What is perhaps less clear is that disputes of both sorts depend, up to a point, on the same considerations. Basic to all systems of values that have any prospect of being defended as objective is their acknowledgement of characteristic or at least statistically ubiquitous ("normal") prudential interests, that is, such interests as of preserving life, minimizing pain, insuring security of person, limb, property, and the like, gratifying desire. These prudential interests are prevalent but not invariant, determinable but not determinate, specifiable but not so as to form a fixed or closed set, presumptive but not overriding; they also form the foundation for every determinate theory of rational behavior though no particular theory is entailed by their admission.[9] For example, the most familiar claims of so-called human or natural rights—of life, liberty, the pursuit of happiness, property—correspond to some putatively minimal core of prudential interests, without the protection of which no characteristic human career could possibly be sustained within any relatively complex society. Continued life, a measure of power to pursue one's particular interests in accord with one's own conception of wellbeing, and some control of the material goods of the world are, it may be fairly argued, essential to any set of routinized human careers. Nevertheless, the admission of these does not entail *any* determinate constraint on what manner or interval of life should be protected, what measure or range of liberty, what details regarding happiness, what share of the material goods of the world. No social program could be content with these alone, but all will endorse them at least implicitly—at no cost, it must be said, since their admission is formally vacuous, though not for that reason socially or politically trivial. Every society will be bound to interpret such minimal prudential interests (or, alternatively, such minimal human rights) in some ideologically determinate way. The result, institutionally elaborated, will appear as the various systems of morality, law, medical care, management of the criminal and insane, and the like. Criminal law, for instance, concerns institutionalizing safeguards against one person's harming or threatening to harm another—where 'harm' signifies sanctionable interference with the presumptive prudential interests of the members of a community; correspondingly, civil law concerns institutionalizing safeguards favoring the exercise of one's positive rights and the benefit of that exercise—where 'rights' signifies determinate forms of behavior in which the law permits our presumptive prudential interests to be manifested. Medicine, on the other hand, concerns the institutionalization of the norms of health and illness, that is, of minimal norms of bodily and personal functioning facilitating some standard, socially favored set of personal objectives and the exertions they involve. In that sense, medicine is a prudential, inherently conservative, but culturally sensitive institution. Since, therefore, medicine is an art providing care for the ill, it has a double prudential aspect: illness in itself is a defective condition of the body or person relative to so-called normal exertions of limb, organ, mind, and the like insofar as they facilitate the pursuit of any of a range of standard activities; and medicine, as the art of maintaining and restoring health within acceptable margins (the problem of rights again), must, since it involves the doctor-patient relationship, be occupied as well with the possibilities of criminal harm and of civil interference with a patient's rights or prudential interests.

Here, then, we see the conceptual convergence of the criminal and civil law and medicine on the presumptive prudential interests of the human race. Other large social institutions will, of course, converge in the same way—for instance, whatever is collected under the categories of the insane, the defective, the delinquent, the deviant, the dying, the young, the unborn, the aged, the infirm, the subversive, the perverted, and the exploited.[10] So part of the reason for emphasizing the conceptual foundation of a patients' bill of rights is to draw attention to the systematic connection between the defense of any particular bill and the defense of any other part of our social fabric. The system of professional services for those judged defective in various ways with regard to their presumed prudential interests defines to some extent the range of competence of medicine itself. This has been dramatized, for example, in recent debates about the extension of such terms as 'mentally ill' and 'mad.'[11] But also, once that connection is admitted, it becomes quite impossible—short of a claim to have discovered, in some suitably cognitive way,[12] what the *true* norms of human life must be—to avoid admitting that every society (and even the competing sub-societies within any society) cannot but interpret minimally prudential interests determinately and in accord with doctrinal ideals that, on the evidence, diverge considerably and may even override such prudential interests.

Roughly, what we see is this. Prudential interests—therefore—presumptive human rights—are no more than enabling factors with regard to which nearly every viable program of community life is actually viable. No society can restrict itself to such interests and such rights, since human beings are so disposed that they are bound to attempt to justify the life they pursue. Inevitably, they generate convictions about the overriding values of their existence; and these, varying as they must from time to time and from society to society, require a conceptual support that goes far beyond the provisional defense of prudential interests themselves. There are at least two further constraints that operate: first, that prudential interests may be overridden on the strength of some doctrine—as, for instance, in defending rational suicide and various forms of euthanasia or the claim of "a right to die;"[13] second, that prudential interests, to the extent that they are not themselves tendentiously formulated, are merely determinable— and therefore cannot be used to justify one or another bill of determinate patients' rights. Every alternative account will simply construe determinate rights as fixing the fair limits within which society should protect the relevant interests. Consider abortion for instance as a specimen issue inviting the provision of particular patients' rights. How could we possibly decide whether and under what circumstances a patient has a right to abortion (answering in other than merely legal terms, for, after all, is not the argument about rights an argument about what rights *ought to be* properly secured)? It's perfectly clear, ignoring the insane fringes of that quarrel, that relatively equipotent but opposed claims about rights can be, and have been, formulated by convinced partisans.[14]

This is not to say that inconsistency, special pleading, irrelevancy, privileged doctrine, and the like cannot be detected. Disputes about values, presumptive rights, fairness and justice need not be entirely arbitrary. The trouble is that even if there are certain necessary, objectively defensible constraints on all competing views, there is absolutely no evidence that conditions sufficient for confirming favored sets of rights can also be objectively discerned. This depends partly on the fact that the very notions of health and illness are to some extent subject to partisan interpretations of the "normal" functioning of the body and person: for instance, not only the question of whether homosexuality is a disease but also the question of normal longevity is subject to doctrinally induced expectations about the range of preferred human careers.[15] Consequently, the interpretation of substantive rights will be a function of prevailing conceptions of illness and disease; and these, to some extent, will be a function of ideologically and institutionally favored expectations of how the body and mind facilitate a range of careers that a given society has come to adopt. But more than this, there can be no sharp separation between the concept of human health and the concept of human happiness and wellbeing; and there is no known way of detecting straightforwardly the true view of human wellbeing toward which medical and legal and quasi-legal objectives may rightly be expected to converge.

All this is a way of saying that once we know the proper norms of health and the proper processes of medical care, we may take it that a bill of rights is intended to place doctors and hospitals under a professional or contractual obligation to insure some minimal congruity between their practice and those proper processes. Either that, or else the provision of such rights is an indirect way of establishing what the norms of health and the norms of medical care shall be. But in that case, we are well advised to see the debate about patients' rights for what it is. Also, having said this much, there is no question that a good many putative rights have to do with the proprieties of any contractual relationship— which both lends plausibility to particular items and locates possible sources of disagreement.

For instance, turning to the details of Annas and Healey's proposal, article 13 is open to reasonable dispute: "The patient has a right to refuse any particular drug, test, or treatment." Our authors suggest in a note that the right "can be based either on straight assault and battery analysis or on an informed consent theory."[16] Normally, this would seem reasonable, that is, reasonable *if and only if* the question of medical service is sufficiently similar to the question of service where health and illness are not at stake. But is it so? Consider that a patient has a highly infectious and dangerous disease that threatens an entire population. To add a rider about such dangers and about the preemptive right or obligation of doctors to override the patient's right would be to risk nullifying the original right itself and to intrude a certain undesirable vagueness. Also, it would provide a general ranking principle that would altogether undermine the intent of the original model bill— namely, that civil rights in the context of treatment behave as they do elsewhere except where medical concerns take precedence. In fact, one could easily replace considerations of infectiousness with considerations of expense, allocation of relatively scarce facilities, and the like: once again, the patient's right may be constrained (arguably) on the assumption of the interests and organization of a certain social system. The point at stake is simple that the apparent reasonableness of article 13 depends jointly on an implied reference to certain paradigm cases only *and* to the background commitments of the community it is designed to serve. Of course, these may be safely assumed to favor 13. But if one imagines a society facing serious reversals from widespread and recurrent diseases, economic hardship, heavy dependence on an able-bodied and healthy work force, then article 13 might well begin to appear most implausible. In that sense, we cannot but admit the doctrinal bias (however humane and generally supported it may be) that informs any and all such bills of rights. Similar considerations affect article 16: "The patient has a right to leave the health care facility regardless of physical condition or financial status, although he may be required to sign a release stating that he is leaving against the medical judgment of his doctor or the hospital." If hospital care is essentially subsidized, say, and constitutes a very heavy economic burden on the entire society (a prospect that is not at all unlikely in the future), then it is not too difficult to see how the argument would go, that obliged a patient, once having entered a health care facility, to remain for as long as competent authorities deemed it advisable *in the interests of the community's wellbeing and health and investment.*

This, of course, is not to deny that Annas and Healey's model bill is a careful, rational projection of ordinary citizen rights extended to the medical care setting. It is exactly that and is intended precisely in that spirit. "Patients," the authors say, "have rights as citizens that they do not forfeit when they become sick and enter a health care institution."[17] But that's just the point. It's one thing to construe a patient's rights in terms of broadly legal rights obtaining outside the medical care setting and quite another to construe such rights in terms of the special services available through the health care professions themselves. In the first, the argument will emphasize essentially the congruity between citizens' rights in and out of the medical setting; and in the second, the argument will emphasize instead the improvement of health care services in terms of society's responsibility for and interest in the ill.

What needs to be noticed is that Annas and Healey's bill predictably combines elements of both sorts of orientation. The chief emphasis, it's true, is on the extension of standard legal rights: availability of relevant information, participation in decisions affecting oneself, protection of property, and access to qualified persons pursuant to protecting one's rights. But, as in article 3, Annas and Healey introduce a more argumentative and specifically medical right that depends on particular social policies of health care: "The patient has a right to privacy respecting the source of payment for treatment and care. This right includes access to the highest degree of medical care without regard to the source of payment for that treatment and care, and a copy and explanation of the bill." In an appended note, they qualify article 3, saying "This right, of course, currently applies only after the patient has been admitted into the hospital. It would take a complete system of National Health Insurance to make non-emergency access to care a 'right' ". Quite so. But what that means is that our authors are essentially concerned to formulate a bill of patients' rights that conforms on the liberal side to existing medical and hospital practice. They are open to attack, therefore, by those who prefer a more conservative fit with existing views (say, further constraints on entitlement to medical care, once admitted to hospital) as well as by those who prefer a more generous view of proper medical service. The matter cannot be objectively decided and is not uncontroversial, simply because the very frame of reference within which Annas and Healey propose their own bill is just the one that would countenance more conservative bills as well, and because that frame of reference is itself subject to criticism in terms of rights that society *ought,* putatively, to insure.

The issue at stake is not that of siding with one bill or another but rather of realizing how impossible it is to take sides except as a partisan of one set of values or another—where the alternatives are fairly plausible projections of elements of a common tradition. The tradition itself is by no means monolithic; and the quarrels already sketched are by no means merely academic. This is perhaps most easily seen by considering article 5, which, because of humane considerations, may well be thought to be beyond dispute: "The patient has a right to prompt attention, especially in an emergency situation." Of course, if this item is part of an actual or implied contract between a patient and a health care facility, the matter is settled. But the question remains whether it is a right that patients may justifiably claim—consequently, whether doctors or health care facilities are objectively open to censure insofar as they resist acknowledging or honoring that right. Dr. Robert Sade for one, has argued that "medical care is neither a right nor a privilege: it is a service that is provided by doctors and others to people who wish to purchase it."[18] His argument is rather extreme and probably unnecessary, but he does draw attention to the model of the market as a way of understanding doctor-patient contracts, with an eye, obviously, to restricting the justification of patients' claims to certain forms of care where antecedent arrangements for the purchase of services are lacking.

It ought to be noted, by the way, that the provision of comprehensive medical care plans *is,* implicitly, a commitment to purchase services; hence, attention to emergency situations need not fall outside Dr. Sade's own frame of reference. In fact, Annas and Healey's constraint on article 3 shows an inevitable convergence between their own more liberal scheme and Sade's more conservative. And if one put the issue in terms of students' rights to advanced education regardless of financial commitments, one would begin to see the possibilities of defending the conservative view with at least as much force as the corresponding more liberal account, or else condemning both from the vantage of a more comprehensive account of educational rights that simply refused to countenance the constraints of private property. At the very least, Annas and Healey, restricting the force of article 3 in the way they do, cannot fail to go some distance toward agreeing in principle with Sade's quite challenging thesis: "If the right to health care belongs to the patient, he starts out owning the services of a doctor without the necessity of either earning them or receiving them as a gift from the only man who has the right to give them: the doctor himself."[19] This is surely the upshot of their demurring, where a complete health care system has not yet been financed.

Sade's own argument, let it be said, is quite openly tendentious. In that very respect, he confuses the essential and purely normative question whether "health is primarily a community or social rather than an individual concern" with the fairly suspicious and, one suspects, unhelpful questions whether "state medicine has worked better in other countries than free enterprise has worked here."[20] There are honest differences about the first— though if one wishes to have the better of the argument, it seems fairest to say that health is both a community *and* a personal concern. It hardly matters, for the reply is entirely able to support competing views about where, precisely, to require medical services without regard to antecedent financial arrangements and where not to require it as an assigned right. In short, the question whose *proper* concern health is is exactly the same question as the question about what a patient's *rights* are. There is no doubt that, ultimately, we must take sides on the issue. But there is no reason to think that, where the question had been quarrelsome before rights were introduced, the strength of competing views is somehow illuminated merely by shifting to the idiom of rights. We cannot but have been partisans before, and we are hardly less after.

Having said this, the following consideration is also in order. It is entirely possible to formulate a great many—possibly all (depending on one's view)—of the essential issues without recourse to the language of rights. Where there are rights, there are counterpart obligations, even though they need not (as, often, in inheritance) be symmetrically assigned. But where there are obligations, there need not be counterpart rights. A professional code, for instance, may be advocated without reference to patients' rights at all. Finally, the humane intent of a model bill may be caught up in terms of trained dispositions of medical care and concern (that is, in terms of virtues), without any reference to rights or obligations. One senses that each of these idioms—those of rights, obligations, and virtues—may be serviceable in rather different ways and in different circumstances. For example, the notion of patients' rights seems most helpful where even the most minimal conditions of fair medical service are in jeopardy; but in pressing that conception, one inevitably favors an adversary interpretation of the doctor-patient relationship. In particular, one anticipates the prospect of criminal and civil suits—which, on any reasonably sensitive view, will seem not entirely attuned to the primary bond between doctor and patient. Ironically, it may even happen, as for instance in construing article 3 in terms of the fee-for-service pattern that prevails in our own society, that "the highest degree of medical care" (avoiding all suspicion of criminal or civil neglect) may actually drive doctors to favor expensive procedures where a kind of benign but restrained surveillance might otherwise have seemed preferable. Clearly, in this respect, emphasis on the obligations of doctors and on the "virtues" of the entire health care community is much more sympathetic to the purpose of medicine than *any* adversary conception could possibly be. But that says nothing about the extent of actual or imagined abuses within medical practice itself.

REFERENCES

1. In George J. Annas and Joseph M. Healey, Jr., "The Patient Rights Advocate: Redefining the Doctor-Patient Relationship in the Hospital Context," *Vanderbilt Law Review*, XXVII (1974), 243-269. They also provide, for comparison, the full text of the American Hospital Association's "Patient's Bill of Rights" (1975), reprinted in *Trial*, IX (1973), 59-60; as well as a weaker text from the State of Minnesota's statute incorporating a Bill of Rights.
2. Cf. David Rudofsky, *The Rights of Prisoners* (New York: Avon Brooks, 1973); Robert S. Rivkin, *The Rights of Servicemen* (New York: Avon Books, 1972); Nicholas N. Kittrie, *The Right to be Different* (Baltimore: Johns Hopkins, 1971), pp. 400-408.
3. T. E. Holland, *The Elements of Jurisprudence*, 12th ed. (New York: Oxford University Press, 1916), p. 83.
4. Cf. Annas and Healey, *op. cit.*, 248, n27.
5. Cf. Robert M. Sade, "Medical Care as a Right: A Refutation," *New England Journal of Medicine*, CCLXXXV (1971), 1288-92.
6. See Joseph Margolis, *Psychotherapy and Values* (New York: Random House, 1966); Joseph Margolis. *Negativities, The Limits of Life* (Columbus: Charles Merrill, 1975); also, Joseph Margolis. "Illness and Medical Values." *The Philosophy Forum*, VIII (1964), 252-260.
7. Cf. "A Definition of Irreversible Coma," *Journal of the American Medical Association*, CCV (1968), 85-88; *Negativities*, ch.1.
8. See Paul Ramsey, *The Patient as Person* (New Haven: Yale University Press, 1970), Chs. 2-3.
9. A fuller account of the conceptual role of prudential interests appears in *Negativities*.
10. See further, *Negativities*.
11. Cf. for instance Thomas A. Szasz. *The Myth of Mental Illness* (New York: Harper-Hoeber, 1961); and *The Manufacture of Madness* (New York: Harper and Row, 1970).
12. Cf. *Values and Conduct;* also, Joseph Margolis, "Moral Cognition," *Ethics*, forthcoming.
13. See further, *The Hastings Center Studies*, II (1974): the entire issue is devoted to "death with dignity."
14. See further, Sissela Bok, "Ethical Problems of Abortion," *The Hastings Center Studies*, II (1974), 33-52; H. Tristram Englehardt, Jr., "The Ontology of Abortion," *Ethics*, LXXX (1974), 217-234.
15. See further, Robert J. Stoller *et al.*, "A Symposium: Should Homosexuality be in the APA Nomenclature?," *American Journal of Psychiatry*, CXXX (1973), 1288-1292; and *Negativities*, Ch. 7.
16. *Op. cit.*, 268.
17. *Ibid.*, 268.
18. Sade, *op. cit.*, 1289.
19. *Ibid.*, 1289.
20. *Ibid.*, 1291.

Parenteral Nutrition (Hyperalimentation)

Harvard Medical School, Department of Continuing Education, announces a course in Parenteral Nutrition (Hyperalimentation), October 28-29, 1975 at the Massachusetts General Hospital, under the direction of Josef E. Fischer, M.D., William M. Abbott, M.D. and Associates.

The aim of this course is to present the current knowledge and theoretical background regarding the application of total parenteral nutrition to a variety of patient disorders in both medicine and surgery. The method of instruction includes formal lectures, conferences, question-and-answer periods, and formal workshops. Lecture notes and selected references will be distributed to provide a permanent record of the course.

The aim of total parenteral nutrition can only be carried out as the result of a team effort and must include the cooperative efforts of pharmacy, nursing service, hospital administration, and physicians. As such, the course will provide instruction in the role of the manufacturing pharmacy, the role of the nursing service in the care of the patient, as well as a theoretical background, and most important, the practical aspects of management of total parenteral nutrition. In addition to the discussion of complicated gastrointestinal tract disorders, including fistulas, inflammatory bowel disease, pancreatitis, the short bowel syndrome, material will be presented dealing with the management of renal failure and hepatic failure by total parenteral nutrition. Elemental diets will be discussed in detail as well. A major effort will be made to discuss the complications of parenteral nutrition and its prevention.

This course will be open to nurses and pharmacists, in addition to physicians in general, interested in parenteral nutrition.

This course has Category I accreditation for 14 hours toward the AMA's Physicians' Recognition Award. Write Harvard Medical School for application forms.

FROM THE EXECUTIVE DIRECTOR'S OFFICE

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Executive Director
Josephine P. Lindquist
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Scientific Activities

Summary of Actions
Council Meeting
Wednesday, July 16, 1975

I. Attendance

Present in addition to the Chairman, Dr. D. A. Grendon, and the Vice Chairman, Dr. J. K. Freedman, were: Drs. VanSyckle, Spitz, Friedberg, Johnson, Backhus, Nolan, Root, Jr., Hess, Bradley, Cramer, Fabro, Granoff, Rubinow, James, Krinsky, Sonnen, Klare, McGarry, Canzonetti, Robinson, Harkins, Magram, Mendillo, Eslami and Barrett.

Also present were: Mrs. Lindquist, Mrs. Roch (Pres., CSMS Auxiliary), Mr. Tomat, Mr. Sweeney and Dr. Richards.

Absent were: Drs. Gardner, Ragland, Jr., Kamens, Beck, Dambeck and Bird.

II. Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of June 12, 1975.

Life Membership

It was VOTED to approve an application for Life Membership received from the following eligible Active Member:

Thomas M. Feeney, 4 Sunset Terrace, West Hartford (H)—1/1/76

Date of Next Meeting

The Chairman set the date of the next meeting for August 21, 1975.

III. Old, New and Special Business

Election of Student Member

It was VOTED to elect to Student Membership the following Connecticut resident who is enrolled in a U.S. medical school:

Michael Andrew Fuentes, 32 Lake Drive, Darien, Conn.
Georgetown University—Class of 1978
Pre-Med: Harvard University

Resignations, Appointments, Etc.

(a) *Editorial Committee of Journal:* It was VOTED to accept with regret the resignation of Roy N. Barnett, Norwalk, as a member of the Editorial Committee.

(b) *Committee on Organ and Tissue Transfers:* It was VOTED to appoint to membership on the Subject Committee: Alfred J. Katz, Farmington.

(c) *CSMS Representative to Task Force on Nursing:* It was VOTED to accept with regret the resignation of Kurt Pelz, Clinton, as CSMS representative to the subject Task Force. It was further VOTED to appoint Oliver J. Purnell, Rockville, to replace Dr. Pelz in that post.

(d) *CSMS—Designate on CRMP Advisory Board:* It was VOTED to receive with regret notice that Guy W. VanSyckle, Danbury, has submitted his resignation as a CSMS-designate on the CRMP Advisory Board to the chairman of said Board. It was further VOTED to request the President and Chairman of the Council to select a CSMS member for nomination to replace Dr. VanSyckle on the Advisory Board and to transmit such nomination to the Chairman of the CRMP Advisory Board.

(e) *CSMS Representative to CRMP Full-Time Chiefs Program Study:* Received as information was notice from CRMP that its Advisory Board had approved the request of the Council (6/12/75) that Charles M. Krinsky, New London, be authorized to serve as a CSMS representative to the subject CRMP study.

(f) *CSMS Representatives on Connecticut Statewide PSRO Council:* Being apprised by James D. Kenney, president of the Connecticut Medical Institute, Inc., that nominations by the Society are now in order for two CSMS representatives to serve on the Statewide PSRO Council (currently being formed), the Council VOTED unanimously to approve such nominations as follows: James D. Kenney, New Haven; Jerome K. Freedman, New Haven.

(g) *Committee on Professional Liability:* It was VOTED to accept the resignation of William F. Bauer, Jr., Middletown, as a member of the Committee representing the Middlesex County Medical Association. It was further VOTED to appoint Daniel J. Buchalter, Middletown, to membership on the Committee replacing Dr. Bauer as the MCMA representative.

(h) *Committee on Public Health:* It was VOTED to appoint Hans H. Neumann, New Haven, to membership on the Committee.

(i) *Committee on Continuing Medical Care and Rehabilitation:* It was VOTED to appoint Michael Mittelmann, Hartford, to membership on the Committee.

(j) *Special Liaison Representative to Connecticut Advisory Council on School Health:* It was VOTED to appoint Leonard Parente, Hamden, to serve as a special liaison representative of the Society to the subject Advisory Council. Dr. Parente's post as representative will be in addition to the Delegate and Alternate Delegate elected by the House of Delegates (Joseph J. Bellizzi, Hartford; Louis A. Parrella, North Haven).

Reports—Fiscal Subcommittee

It was VOTED to take action on a series of reports presented by the Fiscal Subcommittee as follows:

(a) *Program Proposed by Ad Hoc Committee to Study Acupuncture:* The Council VOTED to approve a proposed program on acupuncture, to be held in either Hartford or New Haven on 9/29/75, as outlined by the Ad Hoc Committee to Study Acupuncture, with the caution that neither the title nor promotion of the program should imply approval of acupuncture by the Society. It was further VOTED to approve the recommendation of the Fiscal Subcommittee that up to $500.00 of CSMS funds be authorized to be spent on publicizing the program (paper, printing, postage, etc.).

(b) *Publication of the Bylaws:* Having disapproved a recommendation of the F.S. that an updated version of the Society's bylaws be published in a separate brochure and mailed to the membership "piggyback" with the August issue of the Journal, the Council VOTED to have the updated bylaws published (bound) in an issue of the Journal and to allocate funds to the Journal of up to $1,200 to cover the cost of publication and the purchase of a sufficient number of reprints to meet estimated future needs (new members, etc.) during the next several years.

(c) *Subsidization of the CSMS Woman's Auxiliary:* To approve the recommendation of the F.S. that the Society subsidize the Woman's Auxiliary to CSMS at the rate of $1.00 per Auxiliary members up to a limit of $1,000, on a one-time basis in 1975.

Report—Meeting on Health Education in Schools

It was VOTED to accept for filing a report submitted by James H. Root, Jr. on the proceedings of a joint meeting of CSMS representatives with representatives of other interested agencies (Hartford, 7/2/75) to discuss ways and means of establishing health education curricula in the school system, kindergarten through senior high school. Representing the Society were: Drs. Root, VanSyckle and Parente. Other agencies represented: Dept. of Education, Dept. of Health, Dept. of Mental Health; Connecticut Advisory Council on School Health and the Woman's Auxiliary to CSMS.

In summary, the report indicated that there was general favor for the subject goal but that a number of major and minor "roadblocks" would have to be overcome if the goal is to be achieved. The report also indicated that the Connecticut Advisory Council on School Health will pursue the matter and draft an appropriate bill to introduce at the General Assembly.

Dates and Sites, 1975 Semi-Annual and 1976 Annual Meetings

(a) *1975 Semi-Annual Meeting, House of Delegates:* It was VOTED to approve the New Haven (City) area as the site for the semi-annual meeting of the House of Delegates in 1975, and to approve Wednesday, November 19, as the date for said meeting.

(b) *1976 Annual Meeting:* It was VOTED to approve Wednesday, April 28 as the date for the annual meeting of the House of Delegates in 1976, and Thursday, April 29 as the date for the one-day session of the Scientific Assembly. While those dates had previously been reserved at the Hartford Hilton Hotel, it was VOTED to direct Staff to explore the feasibility of holding the meeting in another Hartford hotel, the Sheraton-Hartford, on the same dates.

Update Report on Activities of CMI, Inc.

The Council members were joined by James D. Kenney, president of the Connecticut Medical Institute, and Mr. Joseph W. Marin, CMI Executive Director. In brief, Dr. Kenney recounted at length some of the problems and frustrations being encountered by both CMI and the four area PSROs largely as a consequence of substantial inexpertness on the part of some persons holding key decision-making posts in the upper echelons of the HEW bureaucracy and a tendency of such persons to favor a from-the-top-down implementation of PSRO instead of from the "grass roots" up (as Senator Bennett intended). On the encouraging side, he reported that, in general, CMI was operating cooperatively with the area PSROs and that considerable progress is being made toward deciding on the "software" and "hardware" offered by several different concerns which would best serve the requirements of PSRO in Connecticut. In the course of his presentation, Dr. Kenney distributed (as quasi-privileged information) copies of a recent letter he had sent to the Director of Bureau of Quality Assurance which brought to the Director's attention a number of the dissatisfactions and problems touched upon above and expressed hope that all or most of them could be resolved. In closing, Dr. Kenney advocated that the Council act to nominate two members of the Society to serve as CSMS representatives on the Connecticut Statewide PSRO Council that will be established shortly. The action taken by the Council on this matter has been reported previously in these minutes.

In a related action, the Council VOTED to urge the Connecticut Medical Institute to seek to assure that the data system (re PSRO functions) is under the control of the CMI and the state's four PSROs insofar as possible.

Nominations to AMA Councils and Committees

Nominations for councils and committees appointed by the AMA Board of Trustees were VOTED to be made as follows: Council on Legislation—Kenneth F. Brandon, Hartford; Council on Insurance—M. David Deren, Bridgeport.

Report—Cancer Coordinating Committee

Having been apprised by E. Tremain Bradley, Norwalk, chairman of the Cancer Coordinating Committee, that the State Commissioner of Finance and Control had announced his intention to abolish the post of Director of the Tumor Registry and perhaps other Registry personnel, the Council VOTED to convey to Governor Grasso the opinion that lack of a well-trained, appropriately paid director of the Connecticut Tumor Registry will do irreparable damage to its effective operation, and that the Registry should be properly staffed with competent personnel at all times. Notice of this action is to be made to: The Commissioner of Health, the Commissioner of Finance and Control and Dr. Bradley.

CSMS Statement of Legislative Objectives re Malpractice

The Council was joined by M. David Deren, Bridgeport, chairman of the Committee on Professional Liability, who presented in published form a statement of the subject legislative objectives which had been approved by the Committee on July 14. By section headings, the report included and made recommendations in the following areas: Statute of Limitations; Doctrine of Res Ipsa Loquitur; Informed Consent: Collateral Source Law; Immunity Statute; Arbitration; Ceiling on Damages; Equal Discovery Rule; Annuities (Trust Funds); Ad Damnum Clause; Lawyers' Contingency Fees; Self-Regulation of Physicians. Noting that minor changes in the wording of the document would undoubtedly be made in the final draft of the document and that, ultimately, the statement would be converted into a legislative bill for discussion with the General Assembly's malpractice study committee, the Council VOTED to approve the report, as amended, as the basis for the Society's approach to seeking legislative remedy for contributing factors to the malpractice problems in Connecticut, and to thank Dr. Deren for the excellence of his presentation.

HEW Reply to CSMS Letter re New Regulations for Medicare Payments

Distributed as information was a 7/9/75 letter received from the Commissioner of Social Security which acknowledged the Council's letter of 6/5/75 asking that the proposed new regulations controlling allowable Medicare payments of physicians' services not be implemented and giving reasons in support of that request. In brief, the Commissioner stated that the regulations would be implemented despite the opposition of the medical profession; that if the new regulations have an adverse effect on acceptance of assignment, it will be "because some physicians may feel compelled to raise their fees above the levels that Medicare determines to be reasonable;" and that the new regulations had to be rushed into implementation in order to be in effect when the Medicare carriers update reasonable charge screens for the new fiscal year beginning on 7/1/75.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on July 16, 1975. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

In Memoriam

Comodo, Nicholas, Queens University Faculty of Medicine, 1935. Dr. Comodo was a practicing physician in the New Haven area since 1952. He retired in 1971 and moved to Wethersfield. He served in both the Pacific and European theaters in World War II and also served in the Korean War. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Comodo died June 1, 1975, at the age of 71.

deCholnoky, Tibor, University of Budapest, 1928. Dr. deCholnoky was a practicing plastic surgeon in the Fairfield area since 1940. He published a number of works in the field of medicine, particularly on reconstructive surgery. Dr. deCholnoky was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. He died June 27, 1975, at the age of 71.

Hillman, Maurice M., College of Physician & Surgeons, 1917. Dr. Hillman was a practicing pediatrician in the New Haven area since 1921. He came to New Haven in 1901 and was educated in the public school system, graduating from Yale College in 1915. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Hillman died June 7, 1975, at the age of 79.

Landry, Arthur B., Jefferson Medical College, 1909. Dr. Landry was an internist in the Hartford area since 1912. A former chief of staff at St. Francis Hospital, he helped initiate a pathology laboratory, asthma clinic and diabetic clinic at the hospital. He served with the Connecticut National Guard in the early 1900s during the Mexican border campaign and later in France as regimental surgeon during World War I. He was a member of the Connecticut State Medical Society, the Hartford County Medical Association and the American Medical Association. Dr. Landry died June 10, 1975 at the age of 91.

Nodelman, Jacob, Yale Medical School, 1929. Dr. Nodelman was a practicing ophthalmologist in the New Haven area since 1930, prior to his retirement in 1973. Dr. Nodelman was a clinical instructor of ophthalmology at Yale Medical School from 1939 to 1943, and was assistant professor of ophthalmology at Yale Medical School from 1947 to 1965. He was assistant attending surgeon at Yale-New Haven Hospital and St. Raphael's Hospital. Dr. Nodelman was a Navy lieutenant commander during World War II. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Nodelman died June 18, 1975 at the age of 71.

Osborn, Stanley H., Tufts Medical School, 1914. Dr. Osborn was a practicing physician in the Hartford area since 1922, specializing in Preventive Medicine and Public Health. Dr. Osborn was the state health commissioner for 37 years and at the time of his retirement in 1959 was the longest serving commissioner in the state and possibly the country. Dr. Osborn was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Osborn died June 7, 1975 at the age of 84.

Ryan, Francis J., Tufts U. School of Medicine, 1935. Dr. Ryan was a practicing physician in the Hartford area since 1936, specializing in hospital administration. He retired from the VA Hospital in Newington in 1965 after 31 years with the administration. He spent the final four years as chief of staff. Dr. Ryan was also assistant medical director for the state Welfare Department and medical director for the Department of Correction, following his retirement from the VA. Dr. Ryan was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Ryan died June 2, 1975 at the age of 66.

Vastola, Anthony P., Fordham Medical School, 1912. Dr. Vastola was a practicing surgeon in the New Haven area since 1913, prior to his retirement in 1970. Dr. Vastola was appointed to the staff of St. Mary's Hospital, Waterbury, in 1914 and continued to serve at the hospital until his retirement. He also served on the courtesy staff of Waterbury Hospital. He was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. Vastola died May 27, 1975, at the age of 86.

Winer, Paul, St. Louis U. School of Medicine, 1944. Dr. Winer was a practicing allergist in the New Haven area since 1946. Dr. Winer had worked with noted allergist Dr. Ethan Allen Brown of Boston, Mass., in the development of new techniques for allergy treatment and at the time of his death was associated with Dr. Arnold Rienlace. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Winer died June 14, 1975, at the age of 57.

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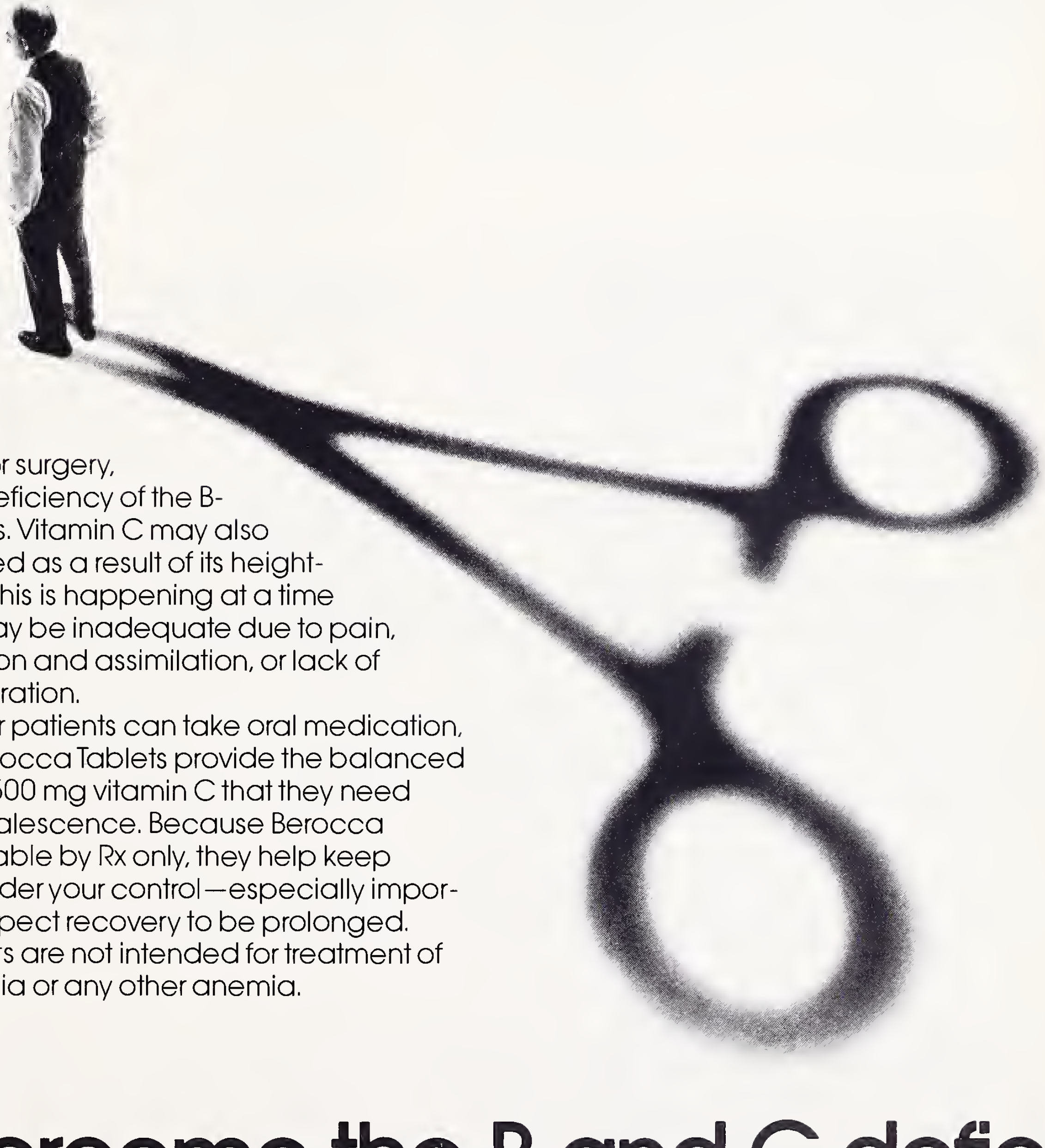

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PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine.*

All of the opportunities for practice and the availability of candidates for placement in Connecticut were updated as of August 1, 1975. At the time this material went to press approximately thirty five new curriculum vitae had been received from physicians who will be available for placement in Connecticut during 1976. The limitation of space prevents the publication of these names all at one time. Individuals or institutions wishing information on candidates are urged to call the Physician Placement Service.

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Anesthesiology: Board eligible. Available now. Connecticut license. Trained in Japan, Canada. Presently Fellow at Wills Eye Hospital, Pa. Tyrone Leung, M.D., 2121 Mt. Vernon Street, Philadelphia, PA. 19130.

Dermatology: Board eligible. Connecticut license pending. FLEX. Available now. 32 years old. Completing training at Albert Einstein, Bronx. Robert Schneider, M.D., 1945-16 Eastchester Road, Bronx, N.Y. 10461.

Family Practice: Completing family practice residency in 1976 at So. Illinois School of Medicine. MD from University of Rochester. 27 years old. Married. Desires group or associate practice in medium sized community with hospital. Daniel M. Blumkin, M.D., 330 Norwalk Road, Springfield, IL. 62704.

Internal Medicine: Gastroenterology. Available 1976. Solo or associate practice in medium sized community. 32 years old. Married. Temple University. MD from University of Cincinnati. GI Fellowship at University of Kansas. Perry Barag, M.D., 9630 Outlook Drive, Overlook Park, KS. 66207.

Internal Medicine: Gastroenterology. Available 1976. Connecticut license. 29 years old. Single. MD from N.Y. Medical College. Presently on Fellowship at Bridgeport Hospital. Especially interested in southwestern Connecticut. Detailed resume available at CSMS.

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INDEX TO ADVERTISERS

Aetna Life & Casualty 542
Boehringer Ingelheim, Ltd. 6
Burroughs Wellcome Co. 592
Classified Advertising 595
Connecticut Blue Cross 558
Arthur W. Eade, Insurance 554
Elmcrest Psychiatric Institute 596
Geigy Pharmaceuticals bet. 588 & 589
Georgia Academy of Family Physicians 564
Geriatric Pharmaceutical Corp. 5, 552
Group Insurers, Inc. 580
Hall-Brooke Foundation, Inc. 580
Kenwood Laboratories 567, 576
Eli Lilly & Co. FC
Loma Linda Foods 4
Eleanor C. Mayer, Realtor 596
Pasha's Oriental Rugs IFC
Pharmaceutical Manufacturers Association bet. 580 & 581, 581
Physicians Planning Service Corp. 595
Robins, Co., A.H. bet. 588 & 589
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VOLUME 39, OCTOBER 1975, NUMBER 10

Walter R. Wilson, Jon E. Rosenblatt, and John A. Washington, II	Anaerobic Bacteremia	597
Malcolm S. Mitchell	Immunotherapy of Solid Tumors	601
Joseph Tenret	Annual Chest Film—Useful?	604
Morton D. Grant and Nicholas DePalma	Cytosine Arabinoside and Irradiation of Meningeal Leukemia	608
M. L. Riccitelli	Vitamin C—A Review	609
Howard J. Wetstone	Primary Care Task Force—Connecticut	623
Lowell S. Levin	Health Education	631
J. Wister Meigs	Connecticut Cancer Epidemiology Unit	637
Henry A. Beyer	Adolescent Rights in Mental Health Care	643
American Medical Association	Representing the Profession—1975	647
Rafael C. Sanchez	Characteristics of the Good Physician	649
Elliot M. Gross	Medical Examiner and Aircraft Accident Investigation	653
Editorials: John Donnelly	"Voluntary" Admission of Mentally Ill Minors	617
H. Robert Silverstein	Treatment of Cardiac Arrest	618
James F. Jekel	Prevention of Tuberculosis	618
Ralph S. Emerson	Malpractice—Arbitration	619
Letters to the Editor: Bernard S. Dignam	CRMP Health Care	622
J. Kenneth T. Ormrod	Flu Vaccination	622
John D. Haugh	Podiatry—Tongue in Cheek	622
Alexander M. Schmidt	Drug Approval and FDA	622
H. Thomas Ballantine, Jr.	Dr. Root's President's Page	622
John C. Wright	Hail and Farewell to Journal	622
Paul W. Brown	Digital Replantation	621
Joel B. Singer *Thomas J. Krizek* *Irving M. Polayes*	Responses to Brown	621

Table of Contents: page 1

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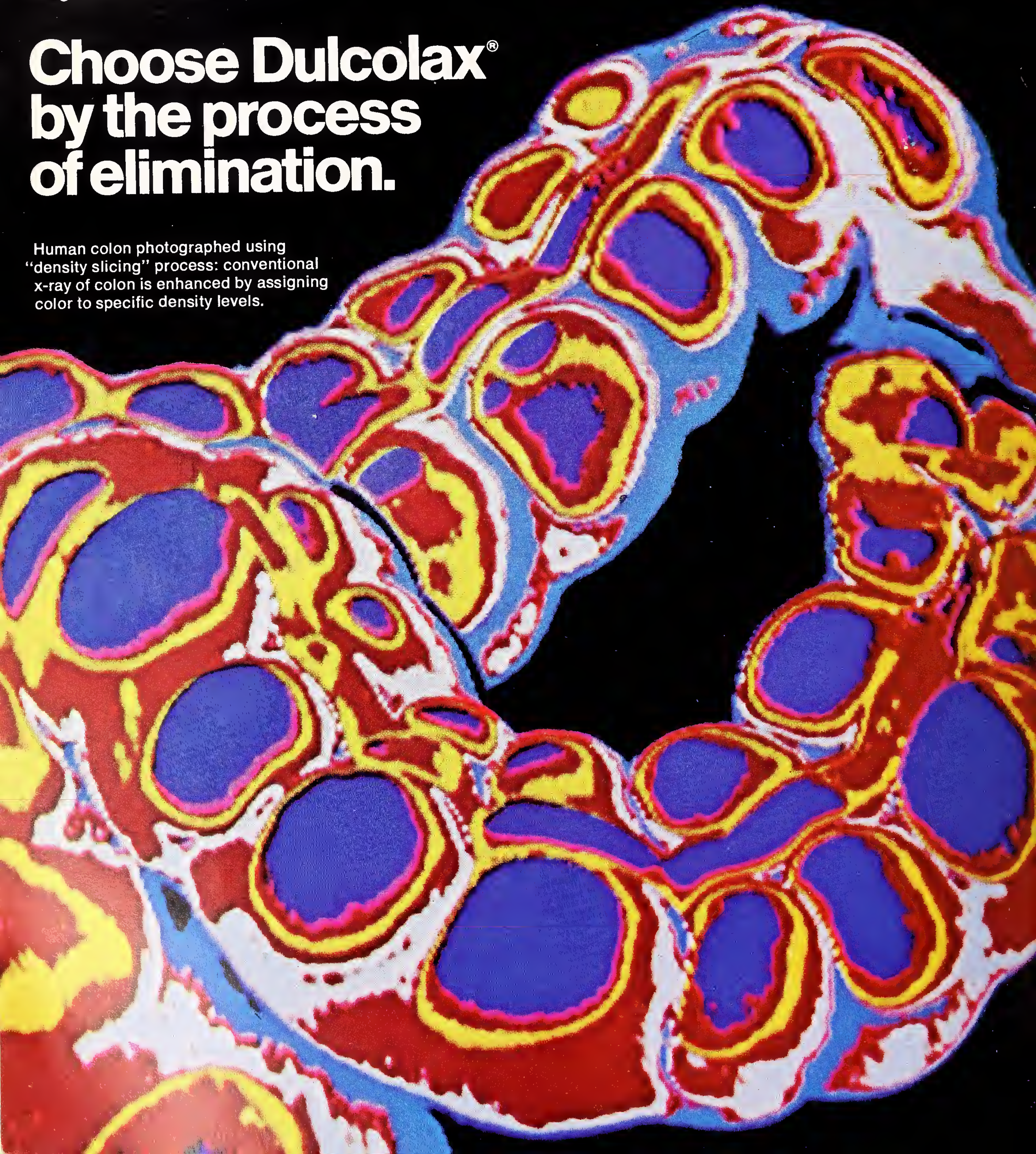

Human colon photographed using "density slicing" process: conventional x-ray of colon is enhanced by assigning color to specific density levels.

Connecticut Medicine

OCTOBER, 1975
Vol. 39/No. 10

CONTENTS

scientific:

Anaerobic Bacteremia, *Walter R. Wilson, M.D., Jon E. Rosenblatt, M.D., F.A.C.P., and John A. Washington, II, M.D., F.A.C.P.* 597
Immunotherapy of Solid Tumors, *Malcolm S. Mitchell, M.D.* 601
Is A Systematic Annual Chest Film Useful? *Joseph Tenret, M.D.*. 604
Cytosine Arabinoside and Cranial Irradiation in the Treatment of Meningeal Leukemia, *Morton D. Grant, M.D. and Nicholas De Palma, M.D.* 608
Vitamin C—A Review and Reassessment of Pharmacological and Therapeutic Uses, *M. L. Riccitelli, M.D.* 609

editorials:

"Voluntary" Admission of Mentally Ill Minors 617
Defibrillation First, CPR—Second in Cardiac Arrest 618
The Prevention of Tuberculosis 618
Malpractice Update—Quo Vadis?—Arbitration 619

departments:

The President's Page 615
Reflections from the Dean's Office, *Robert U. Massey, M.D.* 616

Letters to the Editor:

Paul W. Brown, M.D. 621
Joel B. Singer, M.D. 621
Thomas J. Krizek, M.D. 621
Irving M. Polayes, M.D. 621
Bernard S. Dignam, M.D. 622
J. Kenneth T. Ormrod, M.D. 622
John D. Haugh, M.D. 622
Alexander M. Schmidt, M.D. 622
H. Thomas Ballantine, Jr., M.D. 622
John C. Wright, M.D. 622
From the Executive Director's Office 675
Physician Placement Service 672

special articles:

Primary Care Task Force—Interim Report, *Howard J. Wetstone, M.D.* 623
Health Education: Moving to Center Stage, *Lowell S. Levin, Ed.D., M.P.H.* 631
The Connecticut Cancer Epidemiology Unit, *J. Wister Meigs, M.D.* 637
Rights in Mental Health Care—The Situation of the Adolescent, *Henry A. Beyer, J.D.* 643
Representing The Profession, A Fact Sheet on the AMA in 1975. 647
Characteristics of the Good Physician, *Rafael C. Sanchez, M.D.*.. 649
The Medical Examiner and Aircraft Accident Investigation. The June 1971 Crash At East Haven, *Elliot M. Gross, M.D.* 653

miscellaneous:

The University of Connecticut Health Center Drug Information Service 651
Charter and Bylaws of the Connecticut State Medical Society 657
Woman's Auxiliary 679

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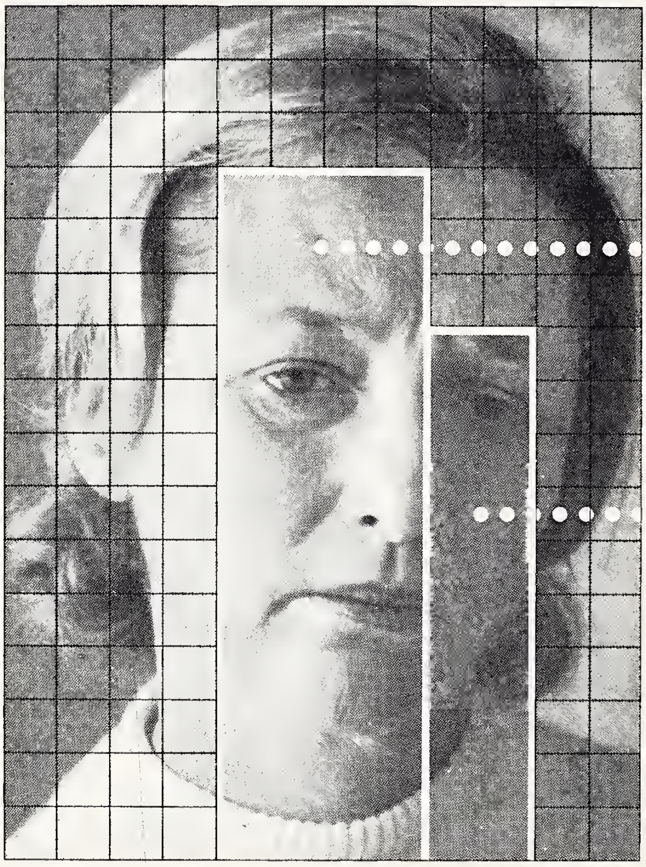

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Anaerobic Bacteremia

**Walter R. Wilson, M.D., Jon E. Rosenblatt, M.D., F.A.C.P.,
and John A. Washington, II. M.D., F.A.C.P.**

Improved culture techniques have led to a greater awareness of the frequency of anaerobic bacteremia.[1-5] At the Mayo Clinic, in 1974 we had 2,200 positive blood cultures, and approximately one-fourth of these contained anaerobic bacteria (Table 1). The frequency of bacteremia caused by the Bacteroidaceae, a family of gram-negative non-spore-forming anaerobic bacilli, has increased considerably during the past 15 years (Fig. 1). In fact, at present at our institution, *Bacteroides* is second only to *Escherichia coli* as the cause of gram-negative bacillemia.

This paper discusses the laboratory diagnosis, clinical features, and treatment of anaerobic bacteremia.

TABLE 1

ANAEROBIC ISOLATES FROM BLOOD

	Isolates		Patients	
Organisms	No.	% of total	No.	% of total
Gram-positive non-spore-forming bacilli	354	66	323	76
Gram-negative non-spore-forming bacilli	138	26	72	17
Gram-positive spore-forming bacilli	29	5	14	3
Gram-positive cocci	16	3	12	3
Gram-negative cocci	2	0.3	2	0.5
Total	539		423	

Laboratory Diagnosis

Recent methodologic advances have increased the simplicity, speed, and efficiency of anaerobic culture techniques. Because infections by anaerobes are among the most common and most serious encountered in hospital practice, basic anaerobic bacteriology is an essential component of any hospital laboratory.

In our laboratory, blood samples from patients suspected of having bacteremia are processed routinely according to techniques described by Washington.[6] It is recommended that two bottles of liquid medium containing 0.025% sodium polyanetholesulfonate (SPS), under vacuum with a CO_2 atmosphere, be inoculated. One of these bottles should remain unvented during incubation in order to enhance the recovery of anaerobes. Subcultures of bottles suspected of being positive should include media incubated anaerobically. The anaerobic jar technique (GasPak, BBL) is a simple, inexpensive, convenient, and satisfactory means of isolating clinically significant anaerobic bacteria.[7]

Clinical Significance and Features of Anaerobic Bacteremia

Gram-Positive Non-Spore-Forming Bacilli —The pathogenic role of this group of microorganisms is poorly understood. Because they are part of the indigenous microflora of the skin, oropharynx, and upper respiratory tract, these organisms are frequent contaminants of blood cultures.[8] *Propionibacterium acnes* is the most common isolate among this group and is the most frequent anaerobe[9] isolated from blood (Table1). Although propionibacteria are frequent contaminants of blood cultures, we have observed that *P. acnes* is more commonly isolated from blood specimens from patients suspected of having bacteremia than from those from healthy adults without apparent infection. These data suggest that the significance of isolation of *P. acnes* from blood depends on the clinical setting, and it should not routinely be considered a contaminant, especially when it is repeatedly isolated from the same patient or from patients with altered immune defenses. Earlier, we reported that only 1 of 164 patients whose blood cultures contained *P. acnes* had a clinically significant bacteremia caused by this organism;[5] this patient died of subacute bacterial endocarditis caused by *P. acnes.* Felner and Dowell [10] have reported an additional five cases of subacute bacterial endocarditis caused by this microorganism.

Gram-Negative Non-Spore-Forming Bacilli—Isolation of these anaerobic gram-negative bacilli from blood is usually indicative of a clinically significant and potentially life-threatening bacteremia.[1 5] The gram-negative anaerobic bacilli include members of the genera *Bacteroides* and *Fusobacterium; B. fragilis* accounts for 58 to 90% of these bactere-

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mias.[1 2 4 5] The typical patient is a man between 30 and 60 years old with some underlying gastrointestinal disorder, frequently carcinoma of the colon, in whom an infected surgical wound or intra-abdominal complication developed 9 or 10 days postoperatively, followed by tachycardia, chills, and a hectic fever.[5] Because a cardinal feature of any anaerobic infection is an unusually foul-smelling pus, the clinician should strongly suspect anaerobic bacteremia in any febrile, postoperative patient in whom such pus is draining from an abdominal wound. Pelvic infections are also a common source of anaerobic gram-negative bacteremia in women.[11-13]

Several clinical features occur more frequently in gram-negative bacteremia due to anaerobes than in those due to aerobes (facultative). These include jaundice (10 to 40% of patients), septic thrombophlebitis (5 to 12%), distant suppurative abscesses (10 to 28%), and, occasionally, hemolytic anemia.[1 5 14-16] Additionally, polymicrobial bacteremia (31% in one report)[17] with other anaerobic or aerobic gram-negative bacilli is not uncommon. This is consistent with the fact that the majority of intra-abdominal and pelvic infections (the major sources of anaerobic bacteremia) contain mixtures of aerobic and anaerobic bacteria.

The overall mortality with anaerobic gram-negative bacillemia is approximately 33%,[5] although the specific rates vary among different patient populations. Obstetric patients have a relatively favorable prognosis,[18] while neonates and patients with serious underlying disease, especially carcinoma of the colon or abdominal carcinomatosis, have a very poor prognosis.[5 19] Patients with polymicrobial bacteremia also have a high mortality (47%).[17]

Gram-Positive Spore-Forming Bacilli —Clostridial bacteremia occurs infrequently—1 to 3% of all bacteremias.[3 5] Historically, clostridial infections have been considered among the most dreaded complications of war wounds and other traumatic injuries. Tetanus, gas gangrene, and clostridial sepsis with gangrenous tissue, hemolytic anemia, renal failure, and shock are clinical entities that justify this onerous reputation. However, patients with clostridial bacteremia often have a benign course and, not uncommonly, recover without specific antimicrobial therapy.[5 20] Ramsay[21] reported that 17 of 28 gynecologic patients with *Clostridium perfringens* bacteremia had localized infections without systemic toxicity. Bacteremia due to *C. ramosum* also has been reported to have a favorable prognosis despite lack of specific antimicrobial therapy.[22] An interesting association exists between *C. septicum* bacteremia and carcinoma of the colon,[23] and clinicians should suspect an occult intra-abdominal malignancy in patients with bacteremia due to this organism without an obvious portal of entry.

Anaerobic Gram-Positive Cocci —Peptostreptococci (anaerobic streptococci) and peptococci (anaerobic staphylococci) are part of the indigenous microflora of the skin, oropharynx, vagina, and other body cavities. These organisms are commonly cultured from clinical specimens (especially wounds), often in association with other microorganisms. They are also occasional contaminants of blood cultures.[24 25] They have been isolated from patients with subacute bacterial endocarditis,[10] liver abscesses.[5-26] empyema,[24 27] osteomyelitis,[28] anaerobic cellulitis (often acting synergistically with Bacteroidaceae),[25 29] or other infections.[25 30] Septic abortion is probably the most frequent portal of entry of bacteremia caused by the anaerobic gram-positive cocci.[31 32] The mortality in bacteremia due to these bacteria is largely dependent on the underlying predisposing condition.

Gram-Negative Anaerobic Cocci —These organisms belong to the genus *Veillonella.* They are a rare cause of bacteremia.[5] Their role in infection in general is not clear. They may infect patients with altered host defenses,[5] and endocarditis caused by *Veillonella* has been reported.[33]

Treatment of Anaerobic Bacteremia

The in vitro antimicrobial susceptibilities of anaerobes tested in our laboratory are shown in Table 2. Because *Bacteroides fragilis* is the most common cause of anaerobic gram-negative bacteremia, it is important to note that this organism is resistant to the antibiotics most frequently used in the treatment of *aerobic* gram-negative bacteremia, such as the penicillins, cephalosporins, and aminoglycosides. Chloramphenicol or clindamycin is the agent of choice for the treatment of *B. fragilis* infection. The anaerobic gram-negative bacilli that inhabit the oropharynx, such as *Fusobacterium, Bacteroides melaninogenicus,* and *Bacteroides oralis,* are usually susceptible to penicillin; however, these organisms are isolated from blood infrequently. Rifampin is active in vitro against anaerobic gram-negative bacilli, but it is not available in parenteral form. In addition, rapid in vitro resistance to this antimicrobial may develop, especially when it is used alone. Metronidazole has excellent in vitro activity against anaerobes and may eventually prove to be useful in the treatment of these infections; however, like rifampin, metronidazole is not yet available in parenteral form, and reported investigational trials are limited in number.[35]

Tetracycline was once considered the agent of choice for the treatment of anaerobic infections but, during the past decade, most anaerobes and especially

TABLE 2

RELATIVE ANTIBIOTIC SUSCEPTIBILITIES*

Organism	Penicillin G	Erythromycin	Cephalosporin	Tetracycline	Clindamycin	Chloramphenicol	Gentamicin
Gram-pos. non-spore-forming rods	++++	++	++	++	++++	+++	+
Bacteroides fragilis	+	++	+	+	+++	+++	+
Fusobacterium sp.	++++	+++	++	++	++++	+++	+
Bacteroides melaninogenicus	+++	+++	++	++	++++	+++	+
Gram-pos. spore-forming rods	++++	++++	++++	++	+++	+++	+
Gram-pos. cocci	++++	++	++	++	+++	+++	+
Gram-neg. cocci	++++	+	++++	++	++++	++++	+

*Data from Martin et al.[34] ++++ = excellent activity; +++ = good activity; ++ = fair activity; + = poor activity.

B. fragilis have become resistant.[34] Currently, therefore, tetracycline should not be used as the primary initial treatment for anaerobic infections.

Surgical drainage of abscesses that are sources of bacteremia is an important adjunct to appropriate antimicrobial therapy.[5]

Penicillin is the agent of choice for the treatment of clostridial and gram-positive and gram-negative coccal anaerobic bacteremias. Clindamycin and chloramphenicol may be used in patients allergic to penicillin. Occasional isolates of clostridia other than *C. perfringens* are resistant to clindamycin in vitro. In the treatment of gas gangrene, hyperbaric oxygen may prove to be beneficial in selected cases. Clostridial antitoxin is probably ineffective in the treatment of clostridial bacteremia. Surgical drainage of abscesses and thorough wound débridement are essential when these conditions are the source of the bacteremia

Summary

All hospital laboratory facilities should be able to perform basic anaerobic microbiology, at least to the extent of establishing the presence of anaerobes and their Gram-stain characteristics. However, clinical decisions, including selection of chemotherapeutic agents, are often required before culture confirmation is complete. Several salient features of anaerobic infections are emphasized:

1. A febrile patient with foul-smelling pus draining from a surgical wound or from a pelvic infection should be considered to have anaerobic bacteremia. The bacteremia may be polymicrobial, involving other anaerobes or aerobes.

2. Patients with gastrointestinal disease, especially those with carcinoma of the colon or bowel perforation, and patients with pelvic sepsis are predisposed to anaerobic bacteremia.

3. The urinary tract is a common source of aerobic bacteremia but an uncommon one for anaerobic bacteremia.

4. The predominant organism causing clinically significant anaerobic bacteremia is *Bacteroides fragilis;* the mortality in these cases is approximately 33%.

5. The antimicrobial agents frequently used to treat aerobic gram-negative bacteremias are ineffective against *B. fragilis;* currently, the best treatment is with clindamycin or chloramphenicol. Most other anaerobes are susceptible to penicillin.

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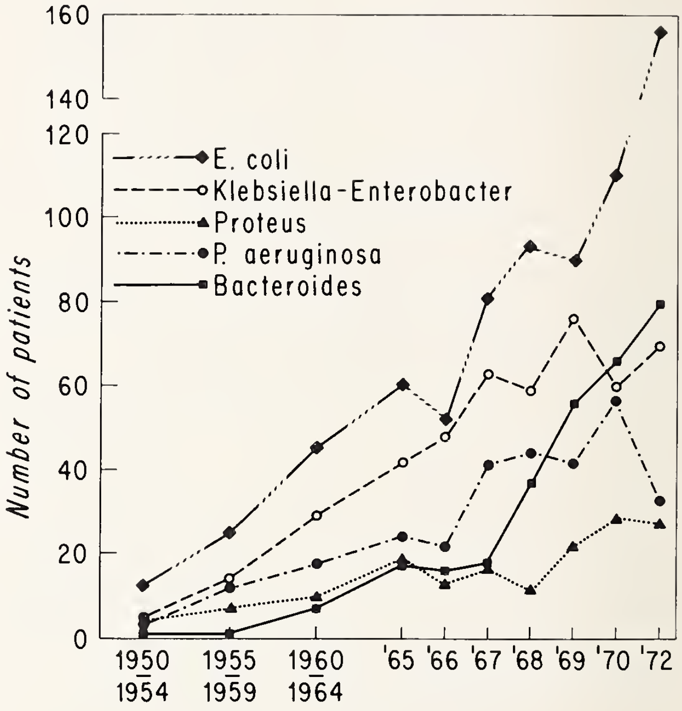

Figure 1

Incidence of septicemia caused by gram-negative non-spore-forming anaerobic bacilli (Bacteroidaceae) from 1950 through 1972. (From Washington JA II: Anaerobic bacteria. *In* Antibiotics and Infection: Practical Diagnosis and Treatment in Infectious Diseases. Edited by IM Smith, ST Donta, S Rabinovich. Flushing, New York. Spectrum Publications, 1974, pp 77-84. By permission.)

Immunotherapy of Solid Tumors

Malcolm S. Mitchell, M.D.

Immunotherapy may be conveniently classified into three categories, active, passive, and adoptive. Active immunotherapy implies an attempt to increase the host's intrinsic response to the tumor; passive immunotherapy, a transfer of serum containing antibodies, and adoptive immunotherapy, a transfer of immune cells or information that will be accepted by the host as his own (Table 1). Whereas with leukemia we usually administer immunotherapy after effective chemotherapy that has caused a complete remission of disease in the hope of achieving a cure, with solid tumors we are often faced with a tumor poorly responsive to conventional therapy. A form of immunotherapy may then be the only kind of therapy we can offer in an attempt to palliate. Nevertheless, there are instances in which immunotherapy is feasible very early in the course of a solid tumor, such as after initial surgery or radiotherapy, where it is possible to attempt to delay recurrence if not to cure. Several of these therapeutic situations will be discussed in this paper.

Table 1
Forms of Immunotherapy

1. Active—Stimulation of the host's intrinsic immunity to tumor antigens
   a) Non-specific—Adjuvants, such as BCG, *Corynebacterium parvum*, Bordetella pertussis, Fluorenone derivatives, poly I:C
   b) Specific—Injection of killed autologous or allogeneic tumor cells, often altered by the addition of haptens or by treatment with neuraminidase.
2. Adoptive—Transfer of immune cells or immunological information.
   a) Lymphocyte transfusions
   b) Transfer factor
   c) Thymic hormones
   d) Bone marrow transplantation
3. Passive—Transfer of immune serum.

The mainstays of active immunotherapy are the non-specific adjuvants of immunity, such as Bacillus Calmette-Guérin (BCG), *Corynebacterium parvum*, and interferon-inducing agents of various kinds including poly I:C and simple chemicals such as pyran and the Fluorenone derivatives. BCG has been the most widely used in man thus far. It is a mycobacterium, *Mycobacterium bovis*, that is effective as a vaccination against human tuberculosis, but also has the property or stimulating thymus-derived (T) lymphocytes, macrophages and "bursa-dependent" (B) lymphocytes. That is, it stimulates both cell-mediated immunity and the synthesis of antibodies. It is important to recognize that BCG is not a selective stimulant of cell-mediated cytotoxicity, for reasons we will consider in more detail shortly.

In conditions such as melanoma, breast cancer, colon cancer, or lung cancer, the surgeon may feel he has removed all apparent disease, but resected lymph nodes may be found to contain foci of tumor. The risk of recurrence of disease in these patients is extremely high. For example, with breast cancer if the nodes are negative there is an 80% chance of a five-year survival after surgery, whereas the figures drop to 20% if nodes are involved. These same figures are repeated for melanoma and colon cancer. With these patients who undoubtedly have microscopic deposits of residual tumor, it seems logical to try some sort of adjuvant therapy. The "adjuvant" therapy, applying the word in its broadest sense of "helper," could be adjuvant chemotherapy, to attempt eradication of the disease at this stage, if the tumor is one that responds to drugs. Breast and colon cancers may fall into this category. Another form of adjuvant therapy is with immunological adjuvants, such as BCG given by the intradermal route, by scarification, or via multiprong inoculation into the skin. This has been called immunoprophylaxis, which attempts to increase the body's immunity in order to enable the host's cells to seek out and destroy the remaining tumor cells. Immunoprophylaxis has been performed at many institutions, but not always with very convincing evidence of its effectiveness, such as prolonged survival. Successful prophylaxis with immunological adjuvants must elicit systemic cell-mediated immunity in excess of blocking activity. Since blocking factor is in part antibody, non-specific stimulation of antibody synthesis might actually increase the recurrence rate of a tumor. For this reason, a patient who has Stage I disease, without involvement of lymph nodes, and thereby has an excellent prognosis after surgery, should not be a candidate for immunotherapy. There is not only a chance of failing to improve prognosis, but also of inducing blocking factor and doing harm. Although this is largely a theoretical consideration, there are many reports of animal experiments indicat-

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ing the facilitation of growth of tumors by adjuvants, in other words, enhancement of tumor growth. The "enhancement phenomenon" is really an immunosuppression of cell-mediated immunity causing more rapid growth or dissemination of the tumor.* BCG in animals has been effective in preventing the initial growth of a small number of tumor cells if given as a pretreatment or with the inoculum of tumor. When given after a solid tumor has had a chance to establish itself, adjuvants have either been ineffective or have facilitated the tumor's growth. By analogy, in man BCG and other forms of non-specific immunopotentiation are indicated only where there is minimal residual disease. Chemotherapy seems preferable for one or two pulmonary nodules of melanoma rather than immunotherapy or further surgery, since the disease is clearly metastatic. Large cooperative group trials are needed to establish the effectiveness of immunoprophylaxis. One requisite for this kind of study is that one monitor the immune response. If a patient is being treated with BCG to attempt to increase his systemic immunity, his physician should measure systemic cell-mediated immunity *in vitro* together with possible serum blocking activity. Even in the event of failure one will know whether the causes were failure to increase immunity or other considerations. Unfortunately, many of the studies with BCG have not yet paid sufficient attention to this aspect.

BCG is demonstrably effective when it is injected directly into a tumor nodule. There is a good experimental precedent in the work of Rapp and his co-workers, with guinea pigs. In man this use of BCG is principally in the treatment of intradermal melanoma nodules. Injection of several million BCG organisms will cause an inflammatory response within 4-7 days which persists over a period of weeks. Fifty percent of the patients treated will have an intense inflammatory reaction that will eradicate each of the injected nodules. The effect is not a totally non-specific inflammation. The patient must have an intact cell-mediated immune response to obtain eradication by this means. The attraction of the macrophages and lymphocytes into the lesion by BCG may simply be an attraction to a foreign substance, but once these mononuclear cells arrive, BCG activates them *in situ*. BCG can stimulate both lymphocytes and macrophages, and lymphocytes and macrophages can stimulate each other through mediators. One can demonstrate this activation by injecting an animal with BCG systemically or by incubating lymphoid cells with BCG *in vitro*. The mononuclear cells attack the BCG and the tumor cells, but do not attack normal tissue, so that the healing of the skin after rejection of the tumor is very good. However, only rarely (no more than 10-15% of patients) is there a regression of distant nodules after the injection of nodule with BCG. Concomitant visceral disease does not seem to be helped by this method of BCG injection. That is certainly one piece of evidence against a systemic effect of BCG, since patients who are treated with a very successful regression of dermal nodules very often develop visceral metastases. This effective form of therapy is cosmetic in one sense, but is more than that since often a patient is debilitated by extensive melanomatous involvement of an extremity with its associated edema.

A variety of antigens have been used, according to the same general principles as BCG to treat skin manifestations of tumor. Primary skin tumors and metastases to the skin from malignant lymphomas, or breast cancer, frequently respond. Many fungal and other microbial antigens are effective, but must be those to which the host has been previously sensitized to get a recall or secondary response at the site of sufficient magnitude to cause rejection of the abnormal tissue. Administration of dinitrochlorobenzene (DNCB) to sensitize a patient, and then application of minute doses over skin lesions has caused local inflammatory cellular reactions to promote rejection of very widespread skin tumors.

A more specific form of active immunotherapy consists of attempts to immunize patients with their own (killed) tumor cells or those from another patient with the same type of tumor in hopes of augmenting tumor-specific immunity. Alteration of the tumor *in vitro* before injection, to make it more antigenic, by attaching additional chemical groups, or by removing the tumor's sialic acid coat with neuraminidase, has been tried experimentally and may soon be studied in man. Since patients with cancer sometimes have a weakened immune capacity, only frequent immunization with highly antigenic cells may prove adequate to improve cellular immunity sufficiently to alter the course of the disease. Enhancement of tumor growth, by the induction of antibody-antigen "blocking" complexes, is also a distinct theoretical problem with this approach through active immunization.

I would like to dispose rapidly of the idea of passive immunotherapy (serotherapy). Serotherapy has been minimally effective in some cases of chronic lymphocytic leukemia when the donor is an individual who is purposely immunized against white cell antigens, some of which are similar to tissue antigens on the leukemic cells. In Burkitt's lymphoma the presumption is very strong that the immune response has helped in causing very long-term remissions after minimal chemotherapy with cytoxan. Serotherapy from the patient in remission to one in relapse is transiently effective. One possible exception to this dismissal of serotherapy is the use of "unblocking" serum obtained from patients in remission from such tumors as melanoma. This serum nullifies blocking factor *in vitro,* and in rats appears to have aided BCG in treating a virus-induced solid tumor. Although their mode of unblocking is unclear, these selected sera are already undergoing preliminary trials in patients in conjunction with BCG. Their value cannot yet be assessed. Serotherapy has the distinct disadvantage of possibly causing enhancement of tumor growth. This is exactly what was done in animals to demonstrate enhancement, giving serum in an attempt to treat and causing instead a faster growth of tumor. For the time being, then, the passive immunotherapy of solid tumors does not seem a reasonable alternative.

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*See "Tumor Immunology," Conn. Med. October, 1975.

Adoptive immunotherapy of solid tumors with transfused lymphocytes sensitized against the tumor is potentially useful, but again the question is whom to immunize as the donor of immune material. One cannot immunize a normal individual with tumor cells, even with killed tumor cells, since we don't know whether the causative agent (virus?) is killed and whether there may be viable tumor cells left. There is one report of an elderly lady who developed melanoma after being injected with "killed" melanoma cells, in an attempt to procure immune lymphocytes for a relative. Immunizations have been performed with normal lymphocytes in an attempt to immunize against cross-reactive leukemic antigens, but immunizing a normal individual with leukocytes could increase his reactions to transfusions and lower the possibility of his acceptance of an allograft in the future. Patients with cancer could be donors of immune lymphocytes but often have less cell-mediated reactivity than normal. There may also be adverse consequences of removing lymphocytes from individuals in a long-term remission from the tumor who need them for their own defenses against the tumor. Graft versus host disease may develop as a complication of therapy with matched lymphocytes, since once lymphocytes are accepted by the host they may recognize some tissue antigens in the host as foreign and attack them. Severe skin, gastrointestinal and liver disease, and even death may result. Transfer of less well-matched lymphocytes might be effective, but if the host is not immunosuppressed he may reject the transfused lymphocytes.

Another adoptive approach is the transfer of "immune" RNA directed against the tumor. Immune RNA has been used by Pilch and co-workers, and before him experimentally by Alexander in rats. RNA extracted from lymphocytes of non-human hosts immunized against tumor can be used to treat the tumor by transferring information to the recipient. A major problem in man is the huge amount of RNA necessary to transfer the ability to overcome a large tumor cell burden. Alexander found that he had to immunize sheep to overcome rat tumors, making the task in man seem monumental. Since "immune" RNA codes for many proteins besides those directed against the tumor, there is a danger of anaphylaxis.

There is one field of endeavor that looks extremely promising in its early stages of development, and that is the use of transfer factor from "naturally" immunized individuals. Transfer factor is an incompletely defined substance from lymphocytes that was first described about 25 years ago by Lawrence. In the past few years it has been tried as a means of treating tumors as well as treating diseases in which thymus-directed (cell-mediated) immunity is deficient. It appears to transfer cell-mediated immunity without transferring the ability to produce antibodies. Some non-tumorous conditions, most notably mucocutaneous candidiasis, have been treated successfully. There has been much less success so far in treating tumors. Transfer factor induces immunity in potentially immunocompetent lymphocytes, probably by recruitment. In the thymus-deprivation disorders the lymphocytes seem to be able to be recruited, but in Hodgkin's disease, at least so far, the use of transfer factor thus far has not consistently helped restore to competence. The duration of responsiveness to tumor antigens after transfer factor is fairly short-lived, requiring many inoculations in order to treat a tumor at all satisfactorily.

The use of hormones extracted from the thymus, to induce a larger population of T-lymphocytes, is early in its development but is a logical approach with a great potential. Whether thymic hormones prove sufficient to augment tumor-specific immunity remains to be seen.

Bone marrow transplants are used principally to treat leukemic and aplastic states. Their main value with solid tumors would be to help overcome any bone marrow hypoplasia induced by chemotherapy or radiotherapy. If one can store the patient's own bone marrow cells and reinfuse them after intensive chemo- and radiotherapy, one could then reverse the harmful effects of aplasia on survival. But as a form of adoptive immunotherapy of solid tumors, transferring lymphocytes by marrow transplantation after eradicating the host's cells by radio- or chemotherapy has not been extensively studied. In animals, normal lymphoid cells have not been effective against tumors, so that a bone marrow transplant from a matched immunized donor is required. This again brings up the problem of how to immunize the donor. It is conceivable, however, that close contacts or relatives of the patient will be found to have immunity to the tumor and circumvent this difficult ethical dilemma. Graft versus host disease is a further serious complication that may arise in these (necessarily) immunosuppressed individuals.

Table 2 summarizes the hazards of the various forms of immunotherapy. Many of these may be oversome by further attention to the details of administration but some are intrinsic to the mode of therapy itself. In general, it seems that immunotherapy is best suited for a direct attack on intradermal tumors, but may prove to be a useful adjunct to more established modalities of therapy after removal of all apparent tumor masses. Greater specificity of therapy is a major necessity in the future. Attention to immunological principles and careful immunological monitoring of patients are prime requisites for further studies in this area.

Table 2

Problems with Various Forms of Immunotherapy

1. Passive:
    a. short-lived
    b. may block intrinsic response of host (i.e., enhancement)
2. Active:
    a. tumor-bearing host may be less immunocompetent or tolerant
    b. specific antigenicity of tumor cells may be weak
    c. possible enhancement
3. Adoptive:
    a. allogeneic (or xenogeneic) cells may be rejected
    b. graft versus host reaction

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Is A Systematic Annual Chest Film Useful?

Joseph Tenret, M.D.

Constant changes in the medical field force us periodically to revise our diagnosis procedures and the systematic annual chest film requested heretofore by many of us as a part of preventive medicine is one of these.

Up until a few years ago, large population layers had been screened by radiophotographic or photofluorographic examinations of the chest. These examinations still take place in some countries with a high level of TB endemicity where nearly everyone has a positive PPD reaction and if their cost can be covered by the public health organizations.[1]

In the United States, dramatic changes in the field of pulmonary tuberculosis have rendered this method unproductive. The aim of this paper is to explain why, at the present time, the routine annual chest film may be considered as useless if tuberculin allergy is not present or if the patient presents no clinical symptoms which may be compatible with pulmonary disease.

A. *Pulmonary Tuberculosis*

The disease incidence, in this country, has fallen by about 35 percent to 40 percent every ten years since the discovery of isoniazid. From 1972 to 1973, there was a reduction of 5.7 percent in the new cases of active disease.

In 1973, 30,998 new cases of tuberculosis were discovered in this country. Among them 3,754 patients had extrapulmonary tuberculosis without pulmonary lesions and could not be diagnosed by chest film.[2]

This means that if we had to diagnose the 27,244 new cases with pulmonary lesions by systematic x-ray examination of the population considered as healthy, 100,000 chest films would be necessary to discover 13 new cases. The productivity of such a practice would be unjustified in proportion to its cost in time, personnel and material. It is wiser and more logical to check the newly discovered tuberculin hypersensitivity of each patient whose pulmonary status is unknown. If the PPD skin test is positive, the patient has a tuberculous infection which should be investigated by x-ray to determine if there is any associated TB disease. This means that we may use the following procedure.

1) *Identification of TB infection cases by PPD skin test*

The most reliable PPD skin test is the intradermal Mantoux with 5-TU or 0.0001 mg. of PPD. The test is considered as positive if its transverse diameter of induration is 10 mms. after 48 to 72 hours (or more

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TABLE I

INH CHEMOPROPHYLAXIS (10 mg/kg/1 year)

(Classification according to Center of Disease Control Recommendations)

Negative PPD *INH Infection Prophylaxis*	*Positive PPD—TB Infection* *INH Disease Prophylaxis (chest film is normal)*
Household or close associate contacts with active contagious TB patient placed on treatment. *To be stopped* If index-case is treated, and no longer contagious. *To be continued* If PPD skin test repeated 3 months later becomes positive.	*If no treatment before:* INH to be given to 1. Household and close associates with contagious TB patient placed in treatment. 2. Newly infected (PPD conversion within past 2 years). 3. Special conditions: a) less than 35 years of age (mandatory through age 6 years); b) prior TB treatment without chemotherapy; c) If x-ray findings compatible with inactive TB lesions; d) prolonged corticosteroid therapy; e) immunosuppressive therapy; f) leukemia, Hodgkin, reticuloendothelial diseases; g) diabetes mellitus; h) silicosis; i) after gastrectomy. *Contraindications for INH* 1. People above 35 years of age, *except* if in categories, 1, 2, 3b, c, d, e, f, g, h and i or if working with children or with patients having immunosuppressive disease. 2. Acute liver disease. 3. Previous INH liver injury or severe reactions. 4. Pregnancy (give INH after delivery). *Probably no INH if* 1. Concurrent use of other drugs susceptible to produce inter-reaction. 2. Dilantin (to be reduced if INH). 3. Chronic alcoholism with liver problems.

N.B. For immigrants having in the past received BCG vaccination which has not been correctly repeated and for whom the positive PPD skin reaction may be due to TB infection after extinction of BCG protection, INH is recommended if patient is classified in categories where chemoprophylaxis is recommended.

than 5 mms. for the household contact of an active case having positive sputa). The other tests (Tine, Mono-Vacc, etc.) are less sensitive and, if used, all except vesiculating reactions should be retested by the Mantoux technique 5-TU tuberculin.[3]

The use of higher dosage of PPD (250-TU or 0.005 mg. of PPD) is not recommended because the 250-TU positive test correlates better with the presence of atypical mycobacteria than with the presence of Mycobacterium Tuberculosis: the result is an increased number of false positive reactions.[4]

If the skin test is positive, the subject has a TB infection which may or may not be accompanied by TB disease.

The obvious conclusion is that each patient showing a positive PPD skin test with unknown pulmonary status should have a chest film done.

a) *If the chest film is normal* and if the patient falls into the categories for whom chemoprophylaxis is recommended (see Table 1), chemoprophylaxis of the TB infection should be done with INH 10 mg/kg daily for one year.

b) *If the chest film shows abnormalities,* the possibility of active TB disease should be excluded by 3 sputum examinations for concentrated smears and cultures.

If the TB infection (positive PPD) is associated with active disease, chemotherapy with two or three associated drugs should be given for two years and INH should always be part of the regimen even if in vitro resistance to isoniazid obliges us to add another medication to our baseline multiple chemotherapy.

If the sputum examinations show that the radiological lesions are old and inactive and if the patient never received chemotherapy in the past, one year of INH chemoprophylaxis is recommended (10 mg/kg).

The undeniable value of the PPD skin test is not absolute. Some authors, such as Furcolow, Hewell, Nelson;[5] Hewell, Suyemoto;[6] Johnston, Saltzman and Butkin[7] confirmed from 1942 to 1959 a high degree of tuberculin hypersensitivity (up to 99.6%) in cases of active tuberculosis.

The statistics established by the Chief of the Tuberculosis Branch of the CDC, P. Q. Edwards, in 1972 are based on solid information and show that 95 percent of the infected population may be identified by a positive PPD skin test.[8]

On the other hand, in a paper of Holden, M., Dubin, M. and Diamond, P.[9] a relatively small number of active TB patients were checked and their results appear as follows: 92.2% reactions to PPD skin test in 61 TB active patients under 50 years of age; whereas there were only 70.4% reactions to PPD skin test in 54 TB active patients above 50 years of age.

Statistics may often give different results and their value is always difficult to interpret since related to the population group tested, to the number of observations done and to the respect of strict mathematical rules which are often misinterpreted in the medical field.

In any case, we know that for some of our active TB cases, a lack of PPD reaction may occur by depression of cell-mediated immunologic processes: aging, overwhelming disease, sarcoidosis, Hodgkin's disease, steroid therapy, absent or blunted hypersensitivity due to viral or other diseases producing anergy. Besides, Mantoux tests may be improperly tested, read or recorded.

It is consequently logical to consider symptoms compatible with tuberculosis as justifying a chest film, even if the Mantoux remains negative.

2. *Treatment of tuberculous patients*

Here again, an important reduction in chest film requests is in line with the new trends.

Our goal in treating a tuberculous patient is to obtain a definitive conversion of the patient's sputa, quite apart from the roentgenologic picture. Since surgery is, practically speaking, no longer used in pulmonary tuberculosis, X-ray findings (cavitation or not) have little importance once chemotherapy has been started, except in the presence of clinical or bacteriological symptoms compatible with disease aggravation or complication.

Repetitive X-rays are useless: there is no parallel between lack of infectivity, which is the most important thing to know, and the regression of X-ray findings.

3. *Follow-up of the inactive patients who have been correctly treated*

In this case, a few months ago, the Center for Disease Control made a clear recommendation for health department supervision of tuberculosis patients: "Tuberculosis patients who complete adequate chemotherapy should be considered cured. They have no need for routine lifetime periodic recall for X-ray examination. Indeed, perpetuating lifetime follow-up of such treated patients diverts clinic personnel and resources from the crucial task of providing services for those who really need them."[10] Treated TB patients are instructed to return to the chest clinic only if they develop clinical symptoms which may indicate a reactivation (prolonged fever, hemoptysis, prolonged productive cough, etc.). Indeed, the reactivation rate after chemotherapy adequate in drugs and time is less than 1 percent.[11] Studies have shown that in most patients with disease reactivations, the reactivations were not diagnosed during routine follow-ups, but because of symptoms which provoked the patient's reevaluation. For instance, in New York City in 1970, 13,000 cases of inactive tuberculosis were under continued X-ray supervision. A program of this proportion became an impossible burden on the health services of the city. A study done at that time revealed that the relapse yield of the 13,000 continued follow-ups was only 0.6 percent and the 65 percent of the reactivations were identified by other means than routine follow-ups. Most were discovered by their reports of symptoms.[11]

B. *Bronchogenic Carcinomas*

Here again, we may be tempted to use annual "prophylactic" chest films to reach a diagnosis as soon as possible.

But what is the productivity of annual X-rays done systematically with this objective in persons without symptoms?

The Philadelphia Neoplasm Research Project carefully followed for ten years 6,136 men aged 45 or older.[12] 120 of these 6,136 subjects developed lung cancer. 8 percent of them were still alive five years after the diagnosis. This means that the survival rate after 5 years was 1 out of 614 of these carefully followed men.

To obtain this one survival, 12,500 chest films were necessary.

Objectively, we are obliged in this study to realize that this procedure cannot be logically and financially recommended.

C. *Radiation Exposure*

Each of us is submitted to multiple radiations during his lifetime with undesirable somatic and genetic effects. At the present time, in this country, the genetically significant dose (GSD) to which we are exposed from medical roentgenologic examinations is approximately half of the average dose due to natural background sources.

In 1964, in the U.S.A., the GSD related to the medical examinations was 55 millirads per year.[13] At the present time, this GSD has risen to 95 millirads yearly which is far higher than in other countries with comparable medical level and results. (See Table 2)

A chest film done in good technical conditions gives only an estimated mean GSD of 0.7 mrad., but the X-rays of the chest account for about 4 percent of the genetically significant dose of all our medical diagno-

Table 2

GENETICALLY SIGNIFICANT DOSE (MRADS/YR) FROM MEDICAL DIAGNOSIS IN VARIOUS ADVANCED COUNTRIES[14]

Country	*Mrads/yr*
United States	95
Japan	39
Sweden	38
Switzerland	22
United Kingtom	14
New Zealand	12
Norway	10

sis X-rays (91 percent of the GSD resulting from abdomen and pelvis examinations).[13]

Up to now, 90 percent of the population exposure to man-made ionizing radiation is due to medical diagnoses. However, there is no doubt whatsoever that with the rapid technological and industrial evolution of our society, we shall be progressively submitted to considerably more man-made radiation exposure. It now seems logical, in view of this situation, that in each case of medical examination, the physician should judge whether or not there is a reasonable expectation of useful information to be obtained by X-ray examination.

The U.S. Bureau of Radiological Health stated that "as much as two-thirds of the present exposure may not contribute to diagnostic information, and therefore may be unnecessary."[13]

Systematic annual chest films involving the exposure of healthy persons should be taken in relation to the possible productivity of these films which, as we know, is extremely poor at the present time in persons having no clinical symptoms.

D. *Uselessness of Systematic Annual Chest Films*

Yearly repeated chest films will not contribute to the prevention of any disease. It is a matter of good sense that if the X-ray findings are normal, this does not mean that a few weeks later a pulmonary disease will not appear. Furthermore, this regular chest film performed in a healthy person may induce an undue feeling of security which might lead the patient to disregard further pulmonary symptoms which could be signs of a severe pulmonary disease. Moreover, the annual chest film is not only useless but exorbitant in its demands on the time and personnel of health agencies whose resources should be reserved for the persons who need them. This is more evident than ever at the present time when the ambulatory treatment of tuberculosis patients without hospitalization or after a short stay in a hospital is the rule.

In this situation, clinic visits and Public Health Nurse contacts with often uncooperative patients are necessarily more frequent than in the past so that any lapse in treatment may be quickly identified and corrected.

Moreover, we are convinced that in a person submitted to an annual check-up, the medical history, clinical findings, or a conversion of the PPD skin test will furnish sufficient information for the physician to judge whether a chest film is necessary for the diagnosis of tuberculosis.

E. *Conclusion*

As with other laboratory tests, chest films must be reserved to necessary cases: when the PPD skin test is positive and X-ray findings are unknown, when the patient develops pulmonary symptoms, or when the evolution of a pulmonary disease under treatment must be checked. In cases of tuberculosis patients in treatment, the X-ray follow-up loses its importance to give way to the bacteriological monitoring which must result in permanent sterilization of the sputa, whatever the X-ray results may be. The X-ray follow-up of the tuberculosis patient having been correctly treated should be discontinued as long as pulmonary symptoms compatible with tuberculosis are absent.

What precedes must be revised for special groups of individuals exposed, for instance, to professional pulmonary diseases. Here the specialized physician in charge of such cases will take the necessary decision.

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Cytosine Arabinoside and Cranial Irradiation in the Treatment of Meningeal Leukemia

Morton D. Grant, M.D. and Nicholas De Palma, M.D.

Abstract—We followed a 29-year old man with acute stem cell leukemia who, while in hematological remission, developed left papilleoedema and facial paralysis with a spinal fluid count of 1000 leukemic blast cells/mm.[3] Intrathecal cytosine arabinoside (IT-Ara C) was given resulting in neurological remission. He then received cranial irradiation and was kept on IT-Ara C bimonthly. There was no significant drug related toxicity. This remission was maintained until his expiration 1 year later—of gastro-intestinal hemorrhage. IT-Ara C is known to induce a response in CNS leukemia, but this is typically brief in duration. Cranial irradiation may enhance its effectiveness in prolonging neurological remission.

Introduction

As survival in childhood type acute leukemia has improved, meningeal infiltration has become an important source of morbidity even while peripheral blood and bone marrow disease remains in remission.[1] Presumably, leukemic cells present in the meninges at the initial diagnosis, later proliferate because systemic chemotherapy does not penetrate the blood-brain barrier in tumoricidal doses.[2] Since 1958,[2] the mainstay of therapy has been external irradiation of the CNS or intrathecal methotrexate (IT-MTX). More recently, IT-Ara C has been shown to be active and free of the severe toxicity often encountered with IT-MTX.[3] [4] This is probably because Ara C is rapidly metabolized in the bloodstream to a therapeutically inactive form following diffusion from intrathecal injections.[4] [5] Irradiation, IT-MTX or IT-Ara C [3] [4] individually employed induce only brief responses and fail to eradicate CNS disease. The following case report suggests that cranial irradiation may enhance the effectiveness of IT-Ara C in prolonging neurological remissions:

Case History

A 29-year old male was admitted in April, 1971 to St. John's Riverside Hospital in Yonkers, New York with acute stem cell leukemia. Complete hematological remission was attained after treatment with Ara-C and thioguanine. He was then placed on 6-mercaptopurine and cyclophosphamide as maintenance therapy and periodically given vincristine sulfate, duanomycin and prednisone. Methotrexate was found to be severely hepatotoxic for the patient and therefore discontinued.

In July, 1972, while still in hematological remission, he developed left papilleoedema and facial paralysis. The spinal fluid revealed 1000 leukemic blast cells/mm^3. He was given IT-Ara C at dosages of 25, 50 and 50 mgms over a 2-week period. The Ara C was dissolved in normal saline to give a concentration adjusted so that the volume injected was 10 ml/M^2 and an approximately equal amount of CSF was withdrawn prior to each injection, as described by Wang and Pratt.[3] This resulted in dramatic alleviation of the paralysis and papilleoedema and reduced the leukemic blast count in the spinal fluid to zero. Mild headache and nausea occurred after the injections. Later, he received 1500 R of radiocobalt to the cranium and was maintained on IT-Ara C, 50 mgms bimonthly.

In October, 1972, there was hematological relapse but the spinal fluid was found to be clear. Systemic Ara C and thioguanine induced a partial remission. IT-Ara C was continued along with systemic chemotherapy through August, 1973, when the patient developed massive hepatosplenomegaly bone marrow relapse and expired of gastro-intestinal hemorrhage. Until the terminal event, the spinal fluid examinations consistently showed an absence of blasts and mononuclear cell counts below 10/mm^3. An autopsy was not performed.

Discussion

The treatment of CNS leukemia has been studied utilizing IT MTX 0.5mgms/Kg given every 2-3 days until remission, or cerebrospinal irradiation with 1000 rads, or a combination of these medhods.[6] The median duration of remission using MTX alone was 87 days, with irradiation 52 days and in combining the therapies no better results were obtained than with MTX alone.[6]

Ara C, a synthetic pyrimidine nucleoside, is known to induce hematological remissions in both acute myelogenous leukemia (AML) and acute lymphblastic leukemia (All).[7] [8]

Wang and Pratt[3] used IT-Ara C on 9 patients with ALL and CNS involvement who had previously received IT-MTX with or without radiotherapy and obtained a median duration of response of 28 days. Band et al[4] induced response in 9 additional patients, 6 having ALL and 3, AML, and cited two who had remissions of 6 and 10 months. They[3] [4] concluded that Ara C is active against CNS leukemia even when this has escaped prior control with IT-MTX, that response typically is of short duration, that drug related toxicity is not serious and does not curtail systemic chemotherapy.

Our patient was maintained in continued neurological remission for one year, which is additional

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evidence that IT-Ara C is active against CNS disease. Of the 18 patients previously reported,[3,4] he was the only one who received concomittant therapy with cranial irradiation and his response was the longest. This suggests that cranial irradiation enhanced the effectiveness of IT-Ara C in prolonging remission.

Combining the 2 modes of therapy for CNS leukemia has logic clinically since Ara C is effective against leukemic cells which are replicating their DNA but not against those in a quiescent state, whereas the reverse is true for irradiation.[9] Radiation reaches the primary sites of CNS leukemia, the superficial and perivascular arachnoid, which extend deep within the brain and here, chemotherapy may not be as effective.[10] In our opinion, the utilization of combined therapy warrents further evaluation in a larger patient study.

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Vitamin C

A Review and Reassessment of Pharmacological and Therapeutic Uses

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During the past five years more research was done on the role of vitamin C therapy than in a score of years heretofore. This article constitutes an effort to summarize the recent developments on this important vitamin, based on a comprehensive review of recent literature.

Classically, the only stated indication for the use of vitamin C was the prevention and treatment of scurvy—and this was the sole thrust of nutritional education on this subject in the medical schools. We know now that vitamin C is of value in many other disease states, related and unrelated to a frank deficiency of this nutritional aid.

All animals except primates, the guinea pig, a fruit eating bat and the red-vented bulbul, synthesize vitamin C at a rate which maintains tissue saturation. "From a teleological standpoint, saturation may be the desirable state in man, since in all animals that synthesize ascorbic acid, the tissues are saturated with the vitamin."[1]

Dr. Goldsmith also states; "In man, certain studies indicate that more ascorbic acid is needed for the maintenance of healthy gums, for normal growth, for the optimal reactions to physiologic and pathologic stress and for the provision of reasonable tissue stores than for the prevention of scurvy."

Only recently have we found that the adrenals, liver and white blood cells have the highest concentration of ascorbic acid in the body. Researchers are trying to find out the cause for this concentration, as well as trying to measure the vitamin C content of all other tissues. The new laboratory techniques have been very valuable in increasing our knowledge of the prevalence and distribution of ascorbic acid in all tissues. We now feel that it is the tissue saturation of ascorbic acid which is important rather than the plasma level. One may have zero level of ascorbic acid in the plasma without scurvy or untoward effect at that very moment the analysis is being carried out. Ascorbic acid levels in the white blood cells are recognized as better indicators of tissue levels rather than plasma levels.

Hans Selye, M.D. Sc.D. defined stress as "when the pituitary stimulates ACTH to have the adrenals make cortisone."

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When there is stress there is an excessive pouring out of ascorbic acid from the adrenals into the urine. This we believe is due to the fact that ascorbic acid acts as a co-enzyme for the manufacture of cortisone (Epinephrine and norepinephrine are also manufactured at the same time by the adrenals.) Ascorbic acid being a co-enzyme acts as a catalyst and aids in the manufacture of cortisone but does not enter into the manufacturing process, thereby being excreted in the urine.

Should the body require additional ascorbic acid for the manufacture of cortisone, it will take the needed ascorbic acid from the weakest organ of the body.

While the fetus is growing, nature arranged that it will have the first choice of calcium regardless of what damage it may do to the mother. This same principle holds true for ascorbic acid in the body. If the adrenals need ascorbic acid it will take this vitamin from either the intima of the blood vessels or the stomach. A marked reduction of ascorbic acid in the intima may produce petechiae, damaging the intima and permitting the deposition of calcified cholesterol. Dr. Selye has also shown numerous blood-covered gastric ulcers in the alarmed animal. This may prove what the clinician has continually stated, that stress may precipitate coronary attacks and ulcers. Most researchers believe ascorbic acid to be the antistress vitamin.

Ascorbic Acid and the Liver

The liver is one of the most important organs of the body. Detoxification is one of its main purposes especially metabolic detoxification. Questions are being asked as to why the older person cannot utilize many drugs as do the young. Many investigators believe that it is because older people have a lower ascorbic acid level in the body.

Dr. Goldsmith showed that vitamin C deficient guinea pigs are more sensitive to the muscle-relaxant, zoxazolamine, then are guinea pigs whose tissues are saturated with the vitamin—the duration of zoxazolamine paralysis in guinea pigs receiving ascorbic acid supplements was 156 minutes, whereas the guinea pigs that did not receive the ascorbic acid were paralyzed for 309 minutes.

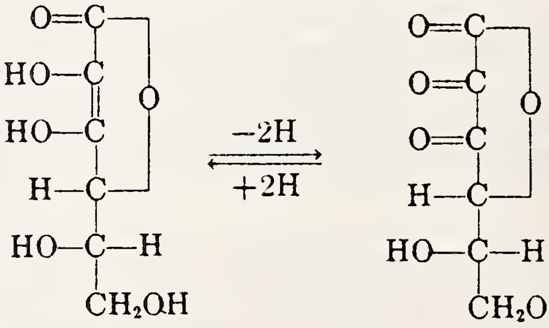
Histamine is produced by allergens. As a toxic agent it should either be detoxified by the liver or neutralized by endogenous cortisone or epinephrine. Many years ago some physicians reported that ascorbic acid may relieve hay fever. We now feel that the dosage used was too small. There is also stress associated with allergic phenomena. We know that an injection of adrenalin or cortisone usually gives instantaneous relief.

Zuskin et al, at the Yale University Lung Research Center reported in the study, "The Inhibition of histamine-induced airway constriction by ascorbic acid." "We found that ascorbic acid can inhibit the airway constrictor effect of histamine in healthy human subjects and also in the isolated trachea of the guinea pig. Thus, the therapeutic use of ascorbic acid in asthma may warrant further investigation."[2]

We are presently experiencing toxic manifestations of heavy metals in the environment, lead, mercury, X-ray and various other pollutants. Iatrogenic diseases due to medications prescribed for patients are causing problems to the medical profession. This is especially true in the older patient who is on many different drugs, including tranquilizers. Detoxification in the body is of utmost importance.

More recently, Leber, Degkwitz and Staudinger[3] (1969) reported decreases in the N-demethylation of aminopyrine and hydroxylation of acetanilid, as well as lowered concentrations of cytochrome P-450 in the liver microsomal fraction of scorbutic guinea pigs. Concomitant with these studies, Kato, Takanaka and Oshima reported the effects of ascorbic acid depletion on the liver microsomal metabolism of aniline, hexobarbital, zoxazolamine, aminopyrine, diphenhydramine, meperidine, p-nitroanisole, p-nitrobenzoic acid and p-dimethylaminoazobenzene.

One must bear in mind that ascorbic acid is both an oxidizing and reducing agent, therefore it plays such an important part as a co-enzyme in the vital functions of the body.



Ascorbic acid **Dehydroascorbic acid**

Figure 1

Zannoni et al, showed that "in vivo and in vitro studies from a variety of laboratories that there is a decreased drug metabolism in ascorbic acid deficient guinea pigs; hydroxylation, N-demethylation, and O-demethylation reactions are significantly lower, as are components of liver microsomal electron transport systems." Furthermore, varying the dietary intake of ascorbic acid demonstrated that the typical drug oxidation reactions and electron transport components correlated well with liver ascorbic acid concentration.[4]

Ascorbic Acid and the White Blood Cells

As stated earlier in this article the white blood cells contain higher levels of ascorbic acid than the average tissue.

Anthony A. Albanese, Ph.D., Director of Research, Burke Foundation, White Plains, N.Y. reported a marked reduction in the ascorbic acid content of white blood cells in older people. Is this due to stress, poor nutrition, or the aging process?

Doctors DeChatelet et al. question "Does Ascorbic Acid turn on Phagocytes?" They proposed a new concept of phagocytosis and conjectured that the action of phagocytosis is aided by ascorbic acid.[5]

To assess the potential physiological significance of the reactions, the effect of ascorbic acid on the bactericidal capability of the neutrophil was tested. Figure 2 demonstrates the in vitro bactericidal activity of 6.7 mM ascorbic acid against E. coli, and S. aureus. Ascorbic acid alone had a significant bactericidal activity after incubation at 37C for 30 minutes. E. coli was destroyed somewhat more readily than S. aureus under all conditions tested.

Bactericidal Activity of Ascorbic Acid

Conditions	No. of viable colonies[a]	
	E. coli	*S. aureus*
No additions	3,300,000 (2,800,000-3,800,000)	2,100,000 (1,200,000-3,600,000)
Ascorbic acid (6.7 mM)	43,000 (20,000-86,000)	130,000 (60,000-170,000)
Ascorbic acid (6.7 mM) + H_2O_2 (0.027 mM) + Cu^{++} (0.003 mM)	10(0-10)	9,000 (1,000-49,000)

[a] Values represent the mean of duplicate determinations in three separate experiments. Numbers in parentheses represent the range.

Figure 2

Doctors Rawal et al.,[6] of the University of Queensland in Australia showed that ascorbic acid acting on its own, is found to exert a bacteriostatic action in vitro on 16 strains of Pseudomonas Aeruginosa tested. In combination with sulphamethoxazole, trimethoprim, septrin, ampicillin, erythromycin, chloramphenicol or colistin sulphate, ascorbic acid acts synergistically on Pseudomonas Aeruginosa in vitro. Recognizing that disease and increase of body temperature produce stress reactions with a corresponding greater need for ascorbic acid intake—it is plausible that greater intake of ascorbic acid should be prescribed in these conditions and especially when antibiotics are necessary.

A question asked by many: "Are antibiotics bacteriostatic or bactericidal?" Phagocytosis is nature's process to deal with infections. If ascorbic acid stimulates phagocytosis and stimulates detoxification by the liver, wouldn't it be advantageous to prescribe ascorbic acid with antibiotics?

Since Dr. Linus Pauling's publication "Vitamin C and the Common Cold" on the intriguing possibilities of vitamin C (especially to prevent or relieve a cold) many comments have been made by and to the medical profession. Recently, Dr. Pauling has been vindicated by three double blind tests which support his prophylaxis theory.

T.W. Anderson, M.D., Associate Professor of Epidemiology of the University of Toronto; Professor D.B.N. Reid, of the same department, and Professor G. H. Beaton, head of the University's Department of Nutrition, showed in a double blind test a marked reduction in working days lost due to colds. "Owing to the combination of fewer episodes and fewer days per episode, the difference between the groups was marked in terms of days per subject, particularly days confined to the house in which the mean figure was 30% lower than that for the placebo group, a difference which was statistically significant."[7]

Clegg and Charleston of the University of Strathclyde, Scotland gave 47 volunteers a daily placebo. The volunteers who took the ascorbic acid daily suffered almost 50% fewer colds than those who took no vitamin C.

Professor Cedric W. M. Wilson, Dept., of Pharmacology, Dublin University reported a 50% reduction in cold symptoms. Wilson and Loh[8] separated his patients' findings into 2 groups of different types of colds. Headache, fever, sore throat and feeling of being "out of sorts" were grouped together as "toxic" colds. The feeling of having a "cold in the head," cough, nasal obstruction and nasal discharge were identified as "catarrhal" colds.

An important contribution to the body of evidence about the effectiveness of ascorbic acid in controlling the common cold has been made by Hume and Weyers.[9]

"There was a significant fall in leucocyte ascorbic levels within 24 hours of the onset of symptoms of a cold. This study leaves little doubt that an increased intake of ascorbic acid provides added protection against bacterial infections by increasing phagocytic activity of leucocytes."

Sahud and Cohen showed that plasma-ascorbic acid levels were abnormally low in all rheumatoid subjects except those taking supplemental vitamin C.

PLATELET AND PLASMA-ASCORBIC-ACID CONCENTRATIONS IN RHEUMATOID ARTHRITIS PATIENTS DIVIDED INTO FOUR GROUPS ACCORDING TO THERAPEUTIC REGIMEN

Group	Treatment category	No. of patients	Platelet-ascorbic-acid concentration (µg./10^{10} platelets) (mean ± 1 S.D.)	Plasma-ascorbic-acid concentration (µg./100 ml.) (mean ± 1 S.D.)
Normal subjects		48	68·60 ± 15·28	102·77 ± 35·01
I A	High aspirin dosage	7	30·86 ± 18·04	52·29 ± 36·34
I B	High aspirin dosage + corticosteroids	7	35·00 ± 10·88	49·43 ± 27·09
II	Low or no aspirin dosage	10	53·40 ± 19·82	59·60 ± 35·89
III	High aspirin dosage + vitamin C	8	55·38 ± 13·84	108·63 ± 81·45
IV	Indomethacin	2	24·00 ± 8·49	31·50 ± 12·02

Figure 3

"Until more information is obtained, it seems reasonable that patients receiving large doses of aspirin for treatment of rheumatoid arthritis should take vitamin C supplements."[10]

There is a tremendous amount of research being carried on seeking data on why so many older diabetics develop hypercholesterolemia, arteriosclerosis, neuropathy and retinopathy. These disease states are uncommon in the young diabetic.

Doctors W. J. H. Butterfield et al, of the University of Nottingham and the Dept. of Medicine, Guy's Hospital, London U.K. found that metabolism of ascorbic acid was abnormal in diabetic tissues. "There was a highly significant correlation between the ratio of W.B.C. ascorbic content to plasma ascorbic acid content—the greater the amount of ascorbic acid in the white blood cells relative to the plasma content, the greater the subsequent insulin sensitivity of the tissues. This correlation held for normals, for diabetics and for the pooled data.

Clearly there is a complex relationship between insulin, glucose and ascorbic acid metabolism and ascorbic acid metabolism appears to be abnormal in diabetics."[11]

Dr. G. V. Mann of Vanderbilt University School of Medicine hypothesizes that in the future, megadoses of ascorbic acid may be used along with insulin to prevent or delay the vascular complications of diabetes. His hypothesis—insulin is required for the transport of ascorbic acid into the cells of certain tissues. Impaired insulin functions may impair transport of the vitamin to these tissues, resulting in a kind of "local scurvy" with faulty collagen formation. This defect may cause thickening of vascular basement membranes, fragility of vessel walls, hemorrhage, and, in the eye, lenticular opacities.

"The correlation between the levels of plasma and ocular ascorbic acid and the presence of cataract is confusing. The ocular tissues of primates maintain a 20:1 aqueous plasma level of ascorbic acid but it has not been clearly shown that persons with cataract have lower levels of ascorbic acid in either the eye or the plasma."[12] It is of passing interest that in southern India, where cataract is endemic, the dietary staple is cereal grain, which is low in ascorbic acid content. All these relationships suggest that human cataracts may be of late consequence of marginal intake of ascorbic acid, the diabetic being especially prone to cataracts because he also lacks insulin to facilitate its transport through the ciliary epithelium.

Dosage of Ascorbic Acid

There is quite a controversy on how much ascorbic acid a person requires. A normal individual requires from 60 to 120 mg. per day to prevent scurvy. The question is how much ascorbic acid is necessary for the patient who is under stress, one who is ill, one who isn't ingesting or absorbing and utilizing the proper nutrients each day. The maximum plasma levels of ascorbic acid is 0.14 mg.%. Any amount over that is excreted very quickly in the urine.

ASCORBIC ACID BLOOD LEVELS IN MAN after administration of 1 gram of L-ascorbic acid, in plain form (effervescent tablets) and in Cevi-Bid capsules.

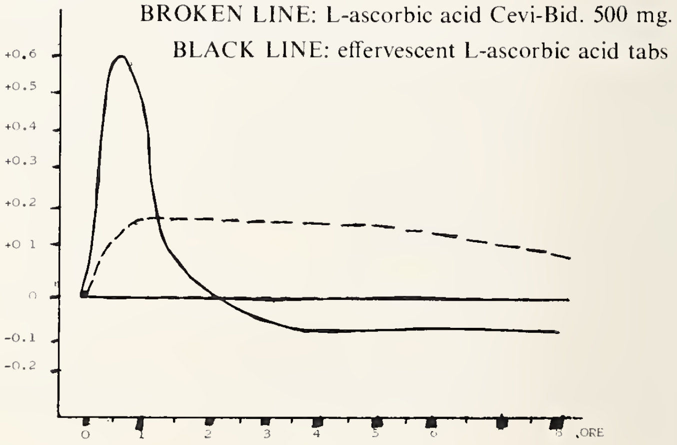


Figure 4

G. Minassi, Ch.D., M. Maccari, M.D., F. Innocenti, Ph.D. Communication made before the Symposium on the Toxicity of Drugs held at the University of Bologna on February 22-23, 1964.

The chart shows the blood levels in patients given 1 gram of ascorbic acid as compared to the levels of patients given a special dosage from a sustained release through microdialysis capsule of 500 mg. ascorbic acid (Cevi-Bid)*. With the tablet approximately 950 mg. of ascorbic acid is excreted in the urine within approximately two hours. This ascorbic acid reduces the pH and appreciatively increases the acidity of the urine thereby increasing the possibility of precipitation of uric acid, cysteine, or oxalates in the urine and dysuria.

By taking large quantities (i.e. 1 gram 3 or 4 times a day) of ascorbic acid, one may over-acidify the G.I. tract, causing a diarrhea, or by over-acidifying the acid chyme of the stomach thereby irritating an ulcer crater. Should a patient take a tablet that is slow in dissolving, it may adhere to the ulcer crater, possibly producing a hemorrhage of the ulcer.

In order to permit convenient b.i.d. dosage for more predictable sustained ascorbic acid blood levels all day and night, avoiding the "peaks and valleys" that result from ordinary vitamin C tablets or capsules we have been using "Cevi-Bid" capsules. This method provides a more satisfactory treatment of disorders requiring administration of vitamin C in repeated doses of relatively small amounts, (releases approximately 50 mg. per hour for 10-12 hours.) Through a special micro-dialysis release pattern we find it far better therapy than tablets for the patient.

The Rationale for Administration of Sustained Release Vitamin C

Once renal saturation is reached, vitamin C is excreted rapidly in the urine. It has been demonstrated that an organism with vitamin C deficiency does not metabolize this vitamin more rapidly than in circumstances of normal supply. Therefore, the use of very large, broadside dosages of vitamin C does not seem justified, since a high percentage of such doses is eliminated without apparent benefit. Furthermore, in the numerous conditions where a state of deficiency is created and maintained by an increased daily requirement of the vitamin, the increased demand of the body can be satisfied only for a very short time. Following each dose and no matter how large the dose, the state of depletion will actually continue for the interval between doses. This creates the need for administration of repeated doses at very short intervals, in order to reach tissue saturation. This frequent dosage pattern, however, presents considerable difficulty in arranging the correct subdivision of the daily total dosage and it is a great inconvenience to the patient.

A more logical solution to this therapeutic dilemma presents itself. Vitamin C in a sustained or repeated action dosage form is now available whereby absorption of vitamin C is spread out over twelve hours by enclosing the vitamin C in microscopic shells of semi-permeable materials. By this technique it is possible to have the vitamin C to be discharged from its protective membranes at predetermined rates, thus permitting vitamin C absorption over long periods of time.

A single capsule containing hundreds of microscopic shells may provide increased vitamin C levels for up to 12 hours. A special advantage of this prolonged absorption period results in the maintenance of blood levels throughout the day and night.

The usual time-release medication dosage form is designed to release the active ingredient on the basis of pH changes in the G.I. tract or enzymatic activity, and cannot be depended upon for consistent results. The reason for this is quite simple; one cannot assume the digestive process is the same in different patients, or even within the same patient at different times.

A number and variety of conditions or events that can cause variations in the digestive tract or the rates of passage through it are almost infinite. The only type of timed release process that can be relied upon to give consistent results, and to be safe at all times, is one whose release rate is independent of pH, enzymatic activity and body activity.

In "Cevi-Bid" the dosage release problem is answered by a process which releases the medication by "diffusion" rather than disintegration. The pellets contained in each "Cevi-Bid" capsule are actually micro-dialysis cells. The cell membranes are so formulated that, at a precisely controlled rate, they absorb water from the G.I. tract and the cells swell with an accompanying increase in permeability. These two effects— the decrease in concentration of the drug within the cell and the increase in permeability of the membrane—act together so that the rate of release can be maintained at a steady predictable rate.

In a study of ten healthy volunteers, samples of blood were taken at 8:00 a.m. Then five were given a 500 mg. ascorbic acid tablet each and five were give a 500 mg. "Cevi-Bid" sustained medication capsule each. Ten hours later blood was taken again and ascorbic acid levels were checked.

Twelve hours after the first dose (tablet or capsule) was ingested, all the volunteers received the same form of ascorbic acid as they previously received. They were then given a similar additional supply for two days, to be taken at 12 hour intervals.

On the third morning all the volunteers returned, and blood was drawn for determination of ascorbic acid levels. The five on "Cevi-Bid" received an additional "Cevi-Bid" capsule; the five on the standard tablet received an additional 500 mg. tablet. After 10 hours, blood was drawn once more for final C determination.

DISCUSSION: The total increase in vitamin C blood levels on the first day after the use of standard 500 mg. vitamin C tablet was 0.40 mg.% and on the last day 0.26 mg.%. Whereas with the "Cevi-Bid," sustained release capsule, the total increase was 1.29 mg.% on the first day and on the last day was 1.19 mg.%.

"This total change of over 3 times that of the standard tablet between the first level and the last level seems to be significant for the size of the sample."[13]

Following are important points that were elucidated at the second conference on vitamin C by the New York Academy of Sciences Meeting held October 9th to 12th, 1974:

1. Ascorbic acid acts as a co-enzyme in the body.
2. During periods of stress—the body requires markedly higher amounts of ascorbic acid.
3. Ascorbic acid definitely helps repair of tissue.
4. Ascorbic acid serum levels are lower in smokers.
5. Ascorbic acid increases the phagocytic action of W.B.C.
6. Presence of micro-angiopathy in diabetics due to low vitamin C.
7. Deficiency of ascorbic acid alters epithelial tissues and predisposes the host to periodontal disease.
8. Epithelial barrier function set up by adequate ascorbic acid levels—prevents endotoxins from penetrating tissues such as gums.
9. Ascorbic acid is very important in maintaining healthy collagen for building of bone tissue (Enzymes are activated by ascorbic acid as a co-factor to maintain good collagen synthesis.)
10. Importance of vitamin C in wound healing—reason for beneficial and rapid healing response.
11. Leucocyte ascorbic levels drop during colds and infections.
12. Aspirin, indomethacin etc. inhibit the uptake of ascorbic acid by leucocytes.
13. During disease states, demand for ascorbic acid increases markedly.
14. Older people have low ascorbic acid content of leucocytes.
15. Oral contraceptives and steroids increase requirement of ascorbic acid.

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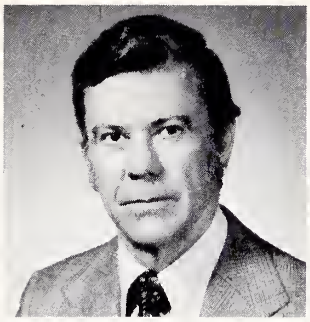
***Cevi-Bid, Geriatric Pharmaceutical Corporation, Floral Park, New York 11001**

The President's Page



As the litany of criticisms of the profession grows, ranging from avarice to incompetence, the most disturbing charge is that we have become insensitive to human values and traitors to our humanitarian traditions.

This time in medicine is almost miraculous in terms of scientific accomplishment. Revolutionary concepts have emerged, including clarification of intracellular coding, new data regarding the energy requirements for cell metabolism, the role of cyclic AMP, and a better understanding of antigen-antibody reactions and cellular immunity. At the clinical level, we have demonstrated that we possess a system capable of delivering high levels of complex medical care in life-threatening illness. The same system, however, has been found wanting in many less threatening illnesses, where understanding and compassion are essential to reach an equivalent end point of patient satisfaction and healing.

Some of this expressed dissatisfaction is merely the reflection of the ongoing reappraisal of all professions and institutions. Some is undoubtedly due to the diminishing role of past sources of personal support—family, community, and church. This plea for more personalized care, however, should not be construed as a request for a return to the venerable image of the physician as a benign authoritarian with his limited therapeutic hardware. In any matter as personal as health, we can expect educated people to insist on the right to make choices between alternative modes of therapy in keeping with those values they conceive as important. Also, the nation recognizes and extolls the progress over the last one hundred years which has brought the profession from something akin to witchcraft to its present highly complex science. Polls do suggest, however, that in the eyes of the public there is often too much science and not enough art!

The question naturally arises as to just where and how this miracle went wrong. Some time ago we stopped distinguishing between disease and illness. Disease is a biological event—an injury to a cell, an organ, or an organ system. Illness is a human event—the event to be interpreted by the patient within a framework determined by previous experience, life style, and temperament. An individual's sense of awareness, hopes, and fears profoundly affect the response to pain and loss of function. Because illness is so intimate and personal, it cannot be understood in scientific terms but only in human terms.

In our desire to search for better scientific means to treat disease, we are in danger of losing some of the good that belonged to the past. Certainly one of the great and truly good things was the close personal relationship between patient and doctor. The major, and sometimes only, therapeutic aid possessed by our predecessors was their obvious intense emotional and intellectual involvement with those under their care. Too often today we talk when we should listen; prescribe when we should explain; refer when we should re-evaluate.

Medical science and medicine are not the same thing. Medical science is science in medicine. Medicine is a broader discipline operating at the common boundaries of science and human needs. If one accepts this distinction, then all scientific advances must be incorporated into the clinical episode without distorting its human orientation. As scientists we must have first class modern technology at our command. As physicians we must also provide those necessary supportive functions for our patients. Complaints concerning the depersonalization of medical care will persist until the public is cared for by physicians who are not only competent medical scientists but are themselves, a vital part of the therapy.

There is no secret to caring for people—the secret is simply in caring.

Guy W. Van Syckle, M.D.
President

Reflections From The Dean's Office

Robert U. Massey, M.D.

This year Congress is again debating the terms under which the government will provide partial support for medical and other health professional education. The old Health Manpower Act of 1971 encouraged an increase in enrollment but otherwise had few strings attached.

With inflation, declining support for research, and diminishing public support, academic medical centers have come to rely more and more on federal capitation dollars. Even though these funds constitute no more than one or two percent of total revenues, some political leaders see them as the tool for reshaping to their image the system of medical education and medical care. Government bought into the education partnership with a relatively small investment; predictably, government is seeking the controlling vote.

The form of the new health manpower legislation is not yet clear. Enough conditions have been suggested to place the medical schools under extensive federal regulation. Courses could be mandated, some programs discontinued while others would be expanded, institutional directions changed, and students' career choices and places of practice determined by their federal masters to whom they would be indentured. Compromise will moderate the final legislation, but it will represent another turn of the screw toward tighter government control over education and science. Some deans are whispering bravely that they could live without this federal support, that they and their students and faculties might elect to keep their freedoms rather than accept the extra dollars. Some few professional schools have never accepted capitation dollars, even under the old rules when the terms were mild. Most academic administrators regarded this as quaint behavior; a few suspected that they were heroes.

The changes in our health and biomedical research system which prominent leaders in the Congress would like to accomplish by manipulating the schools would strike many as eminently reasonable. More primary care, better specialty and geographic distribution, extension of medical school programs into the community, educational programs to meet *real* needs, etc., etc., are not goals which any reasonable physician, dentist, nurse, student, patient, politician or ordinary citizen would reject, supposing he had ever thought about them.

The issue is the ancient one of balance between freedom and social welfare; how much freedom are we prepared to yield to insure that no one is more than 30 minutes from a primary care facility at all times? It may be more than we had reckoned, especially if we forget that our government shares with all governments an overwhelming urge to control.

Recently there have been many publications describing the vastly improved systems of health care in nations which have accepted communism, or at least some kind of advanced social planning. One publication suggests that a compassionate, humane, and equitable medical care system is not possible under capitalism.[1] Another describes the miraculous advances in medical care and public health which have been achieved among the North Vietnamese. For example, gonorrhea and syphilis are said to be medical rarities. Schreier,[2] in discussing the difference between our system and that in North Vietnam, suggests that such achievements are not possible where health care is the responsibility of a profession which is in partnership with industry and the insurance companies.

Medical care in Cuba, Indochina, and China may have shown impressive strides since their revolutions. Except for fostering a little folk medicine to make it palatable to the peasants, they adopted western medicine. That their health care is well organized would be predictable. So are their police. There is no excuse for bad organization in a totalitarian state. Hitler's Germany built the Autobahn two decades before we began to take the automobile transportation problem seriously.

We could have a rational system for health care and social welfare in this country within a decade. We could provide for primary care within thirty minutes of everyone; we could have the equivalent of barefoot doctors; we could have almost 100% compliance with immunization programs; we could wipe out venereal disease, drug addiction, and even lung cancer. We know how to do all of these things. All we need is a bare majority who are enlightened enough to recognize that these accomplishments are more important than freedom. The political apparatus is always ready to regulate.

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DR. ROBERT U. MASSEY, Dean and Professor of Medicine, University of Connecticut. School of Medicine, Farmington.

Connecticut Medicine

Editorials

"Voluntary" Admissions of Mentally Ill Minors

The populist concern for the legal rights of minority groups has spawned amongst academic attorneys widespread interest in the legal rights of other groups as areas for professional challenge.

The field of mental illness has provided many such opportunities, for in the societal scheme of values the emphasis has long been placed on protection and care of the mentally ill who are unable to fend for themselves. Historically, the mentally ill, the pauper and the criminal, were once all grouped together and treated (or ill-treated) alike. Now they have been placed in separate categories of individuals for whom care must be provided. Thus, State hospital systems evolved out of deep humanitarian concern for the emotionally impaired.

Originally, such patients were admitted to the hospital on the application of the individual responsible for their care. As the result of a well-publicized account of the wife of a clergyman, admitted on the request of her husband to a hospital in Illinois in 1860, laws were passed in the various States to govern involuntary confinement.

These included trial by jury. Later, with recognition of the barbarity of this approach, this criminal process was replaced by more humane procedures for commitment.

Further, the legal rights of the committed patient with respect to communication under seal with others, visitation by a physician or clergyman of the patient's choice and the access to legal counsel were enacted.

With the recent increasing acceptance of mental illness as a medical disorder, greater numbers of individuals have sought psychiatric treatment. Admission by written voluntary application by the ill person was made possible by legislative action, with inestimable beneficial effects on the treatment process.

It is undoubtedly true that some individuals admit themselves as voluntary patients because they are aware that those legally responsible for them might or will initiate court procedures for commitment. These patients almost universally face up to the need to participate in treatment.

The legal rights of minors, including the mentally ill minor, have recently become a prime focus of attention. While the age of full majority has been reduced to eighteen years, in some State jurisdictions still younger ages apply in relation to specific matters such as marriage. In Connecticut, with respect to voluntary psychiatric hospitalization, an individual reaches his "majority" on his sixteenth birthday, that is, he may admit himself to a psychiatric hospital.

Prior to that age, the minor who is the responsibility of his parents can be admitted by the written application of his parent or legal guardian who retains the right to withdraw the minor until his sixteenth birthday. In other words, the Connecticut Statute treats the minor as an extension of the person of the parent.

Shades of Mrs. E.P. Packard, the wife of the Illinois clergyman, are increasingly about us! Legal protection against the confinement of minors without due process is developing as a new arena. In fact, a class action suit has recently been filed in Connecticut against the State authorities to test the validity of this "voluntary" admission of minors.

In the current context of life by legal rulings, together with the underlying anxieties so prevalent in many regarding mental illness, it seems inevitable that new legal procedures will be established with respect to hospitalizing mentally ill minors.

There are, however, serious issues and practical problems to be confronted. Psychiatric illness in adolescents is a highly technical field. A danger lies in the failure to ensure that the persons appointed to oversee hospitalization of minors are competent to the task. Experienced psychiatrists can attest to the not infrequent exposure to attorneys who take as clients young psychiatric patients and who emotionally identify with the patient—even some judges are not immune from this phenomenon, as witness a recent press conference by a Connecticut Juvenile Court judge. With the experience, for example, of an attorney entertaining a female client, who was an inpatient just turned eighteen, permitting her to consume hard liquor to excess (five martinis and a "Bloody Mary") and justifying smoking marijuana, there arise natural concerns about the "benefits" of legal protection.

Adversary positions are fundamental in our legal system. The danger to the welfare of the minor by the introduction of advocacy in this form in situations in which there should be no adversary appears self-evident.

Another danger to be avoided is that of a minor in need being removed from a psychiatric hospital and then left without adequate alternative arrangements for his protection. There are attorneys who view their responsibility as strictly limited to asserting the legal rights of their clients—what happens subsequently is of little concern to them. To leave an adult on the street at the hospital door is one thing; to leave an adolescent under sixteen to fend for himself is another.

That the legal rights of minors are in a state of flux is apparent. The hope is that the overall welfare of the minor will be borne in mind as the overriding motivation in making changes.

John Donnelly, M.D.

Psychiatrist-In-Chief
The Institute of Living, Hartford

Defibrillation First, CPR Second in Cardiac Arrest

Extensive personal experience has recently resulted in convincing me of the fact that the archaic tradition of initiating cardiopulmonary resuscitation *first* continues when immediate defibrillation is available and indicated and should be the treatment of choice.

Although many cardiovascular deaths are indeed sudden and irreversible, secondary to the fact that no medical personnel are in attendance to perform appropriate cardiopulmonary resuscitation, it has long been known that *most* "cardiac arrests" are secondary to ventricular *fibrillation* rather than asystole and that the therapy of choice is immediate defibrillation. Hence, when a known or suspected cardiac patient falls to the floor, or appears to have "syncope" or a "seizure" but is clearly PULSELESS, the vast (75-90%) probability is that the patient has ventricular fibrillation for which the *best* therapy is "blind" defibrillation as recommended in the recent *Journal of the American Medical Association* editorial.[1]

That editorial as well as the original study[2] point out that defibrillation "can be accomplished without electrocardiographic verification of the arrhythmia." According to the study of Grace et al[1] survival rate is *doubled* from 27 to 45% when the approach of blind defibrillation is used in the above situation (pulseless cardiac patient). "There is no evidence that patients with asystole will be harmed by electrical direct current countershock and, in fact, restoration of cardiac action may result, similar to that which occurs following a forceful blow to the chest."[1]

It is hoped that this statement, reporting on the attitudes and experience as well as excellent clinical investigation of this point will cause a revision in the attitude of most hospitals and particularly most post-coronary care units where cardiac patients may be unmonitored and frequently have "cardiac arrest" or "syncope" which is secondary to ventricular fibrillation.

Since physicians are infrequently in direct attendance when these patients suffer these catastrophes, and since the nursing staff consistently is more available than the medical staff, it is recommended that nurses should be trained in the concept of blind defibrillation and then proceed with this blind defibrillation *preceding* EKG verification of the arrhythmia and in the absence of a physician. Obviously, it is important to ascertain that the patient has not merely fainted, and simply checking the carotid or femoral pulses and/or a quick listen for heart sounds will adequately differentiate those conditions. The patient should *not* be hooked up to an EKG machine to determine the arrhythmia since that will inappropriately delay proper therapy. Once the fact that the patient is indeed "pulseless" is established, and if the uncommon problem of airway obstruction is not the cause, then immediate "blind" defibrillation is indicated and recommended as the single most valuable life saving procedure.

H. Robert Silverstein, M.D., F.A.C.C.

Chairman, Professional Education
Sub-committee
Connecticut Heart Association

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The Prevention of Tuberculosis

With the new active case rates of tuberculosis falling at about 5% per year in the United States, one might wonder why space should be devoted to the publication of recommendations for preventive therapy of this disease. However, there are still many reported cases of the disease in Connecticut (278 new active cases in 1974). Moreover, an unpublished confidential study done a number of years ago by the Connecticut Lung Association suggested that approximately half of the active tuberculosis cases being treated in the state are never reported to public health authorities. If that estimate is correct, there are approximately 550 new cases per year in Connecticut, or a yearly incidence rate of about 17.5 per 100,000 population. Because of the seriousness of the disease and its capacity for spread, there is no justification for becoming casual about it; a century ago the disease was the leading killer in Europe and America, with a *mortality* rate of roughly 300 per 100,000 per year. Because most physicians no longer see the disease frequently, it is especially important to make the recommendations of experts available to them. That is what *Connecticut Medicine* has done in publishing the

Public Health Service's recommendations on the prevention of tuberculosis.

Most tuberculosis cases today are not due to active spread of the disease but rather are due to endogenous infection (that is, reactivation of a previously acquired but dormant infection). The lifetime risk of reactivation of tuberculosis in a tuberculin skin test reactor has been estimated to be in the vicinity of 2 to 4 per cent. It has also been shown by the U.S. Public Health Service field trials that a year of prophylactic Isoniazid therapy in a tuberculin reactor reduces the risk of reactivation to about one-half of what it is without this treatment. Therefore, from the time of the publication of the Surgeon General's Task Force report on tuberculosis control in the 1960's until recently, the U.S. Public Health Service has emphasized finding skin test positive persons and giving them a course of INH prophylaxis. This would prevent half of the future cases of endogenous tuberculosis and any spread resulting from them.

There have been several challenges to this approach. The first has been a long standing argument by some, that the national program of tuberculosis control should be based on BCG vaccination, as has been the approach in many European countries. The argument has been complicated by differing interpretations of the effectiveness of BCG vaccine (e.g., it does not give much added protection in areas where infection with atypical mycobacteria is common, such as in the southeastern United States), and by different cost-effectiveness models. Nevertheless, it would seem that the weight of the argument lies with the approach recommended by the Public Health Service. All BCG vaccine can do, at best, is prevent most of the exogenous cases from developing in tuberculin negative persons. At the present time the infection rate for children in this country is estimated to be about 0.03% per year, hardly enough to justify a major national program which also has the disadvantage of eliminating the subsequent usefulness of the tuberculin skin test. And BCG vaccine would do nothing to prevent the occurance of the 80% of our new cases which come from those already infected with *M. tuberculosis.*

A second challenge to the approach based on INH prophylaxis has come from the discovery of a potential hepatitis problem in those receiving INH. Nevertheless, since this danger is small in persons under 35 years of age, and since its appearance can be detected early by laboratory surveillance and the drug stopped, there would seem to be no serious obstacle to following the Public Health Service recommendations for INH prophylaxis.

Another difficulty with a national program of mass tuberculin skin testing (especially in schools) is the extremely low and falling infection rates now found. In most areas of the country, not only are mass X-Ray programs useless, mass skin testing programs are no longer cost-effective either. Therefore, the Public Health Service recommendations focus on the testing and prophylactic treatment of individuals and small groups that are known to be at high risk for developing active disease (in order of priority): 1) close contacts of newly diagnosed active cases, 2) positive tuberculin reactors with abnormal findings on chest X-ray, 3) newly infected persons, 4) positive tuberculin reactors in special clinical situations, and 5) other positive skin test reactors. It is the practicing physician in Connecticut who is most likely to be in a position to implement these recommendations.

As the Public Health Service report emphasizes, there is still a place for BCG vaccine in situations where good medical surveillance and control are not possible for social or other reasons.

In general, the Public Health Service recommendations are thoughtful and useful guidelines for both clinicians and public health practitioners, and they should be kept for easy reference by every physician who may have occasion to deal with tuberculosis. Connecticut Medicine has done a valuable service in reprinting them for the Connecticut medical community.

James F. Jekel, M.D., M.P.H.
Associate Professor of Public Health
Yale University School of Medicine

Malpractice Update

Quo Vadis?—Arbitration

At the June 1974 annual meeting of the A.M.A. House of Delegates the New York Delegation introduced a controversial resolution on malpractice to alert the physicians of the impending malpractice crisis.

Within a few months and accelerated by the deteriorating economy, the malpractice insurance crisis broke and spread rapidly from the densely populated states throughout the country. Insurance carriers withdrew from the marketplace and demanded premiums of twenty to forty thousand dollars in the high risk specialties, not only in New York, Michigan and California, but also in Texas and South Dakota.

The drive for malpractice restructure was launched in the state legislature with packages of legislative reform addressed to a ceiling on awards, contingency fees, informed consent, statute of limitations, Res Ipsa Loquitur, Ad Damnum, pretrial hearing panels with admissibility of findings in court trials and life care structuring (annuity) of awards. Joint Underwriting Association (J.U.A.) of insurance companies was legislated to provide an insurance vehicle *but* at a price. Disciplinary procedures were restructured in many states.

Legislative reform on the sensitive malpractice subject in legislatures dominated by lawyers is not accomplished overnight, and some changes require constitutional revisions which delay implementation for several years. The Indiana legislation leads the way but is unobtainable in many states at the present time. Most affected states will legislate some degree of reform. The impact on malpractice insurance premiums will perhaps be in the order of 10% or 15% reduction, unless there is a ceiling on awards and contingency fees, and the impact is several years in the future.

It is obvious there will be a "brain drain" of high risk specialists from the high premium states. There will be significant increase in health care costs which will hit the pocketbooks of the public, as physician and hospital charges reflect these exorbitant premiums.

The malpractice system must be restructured away from the present inefficient and expensive court system. We have neither the time nor the inclination to await the tedious and protracted state legislative reform procedures.

If the recent past trend of increasing malpractice suits and awards continues, a respected actuary of Peat, Marwick and Mitchell estimated in twenty-five years the price tag for malpractice will equal the gross national product. We must respond with a dynamic new approach which is tailored to protect the rights and yet fit the changing needs of society.

There is an alternative which we must explore and is available without legislative changes in 36 states. It is called *Voluntary Contractual Binding Arbitration* under the auspices of the American Arbitration Association, (A.A.A.), and is legal in Connecticut at the present time. This national organization has been in existence for 49 years, and has been arbitrating labor and management disputes for decades. In New York State at the request of the Superintendent of Insurance, they have been arbitrating personal liability injuries since the introduction of the "no fault" automobile injury law. Pilot programs have been in existence on the West Coast for several years. While the total cost may not be altered the first few years due to the accordian effect of compressing claims within a few years, the long range effect is earlier settlement of claims and lower awards.

This method of arbitration is projected to remove some 90% of claims from the court system to an impartial arbitration panel of attorney, consumer and physician with financial penalties for frivolous claims. The patient voluntarily signs an agreement in the physician's office and on entering the hospital. In the event of an injury the patient agrees to the impartial arbitration panel decision of the A.A.A. The patient is permitted to opt out within 30 days after discharge from the hospital. If there is an injury and the patient does not opt out within the above time frame, any future claim must go to arbitration, and the decision is binding. The injured person may be represented by his attorney. However, the quicker recovery, an impartial legal arbitrator and less work for the plaintiff's attorney reduces the legal costs.

In the office each new patient is asked to sign an agreement to go to arbitration in the event of an injury. This must be a voluntary act on the part of the patient, and a physician should not refuse treatment if a patient refuses to sign. Experience in hospital arbitration programs has indicated less than 1% of the patients refuse to sign the agreement.

There must be a written agreement between the professional insurance company, the American Arbitration Association (A.A.A.) and between the individual hospital and the A.A.A. Hospitals should establish grievance mechanisms and try to settle the grievances before the cases go to arbitration. At least seventy-five percent of the attending staff should participate to be effective.

The injured party benefits by a decision within a few months in contrast to an average 7 years via the court system. The injured party receives a greater percent of substantial awards. In addition, should there be a serious injury, provision is made for further hospital care and rehabilitation services if necessary.

The Medical Society of the State of New York and the Hospital Association of New York State are instituting this program under the auspices of the American Arbitration Association in August, 1975. At the A.M.A. House of Delegates meeting on June 19, 1975, Resolution 20 (modified) was adopted which recommended the A.M.A. suggest their members institute voluntary arbitration in malpractice under the auspices of the American Arbitration Association or other mechanisms consistent with state statutes in cooperation with their respective state hospital associations.

We are at the crossroads of the malpractice dilemma, and the question is—Quo Vadis? (where are we going?) We believe the route of *Voluntary Contractual Binding Arbitration* is an alternate method which merits consideration while we vigorously pursue the necessary long-range tort changes in our state legislatures.

Ralph S. Emerson, M.D.
President
Medical Society of the State of New York

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

DIGITAL REPLANTATION

To the Editor: This regards the subject of digital reimplantation which was discussed in two papers and an editorial in the July 1975, CONNECTICUT MEDICINE. Before we all rush out to sew on lopped off fingers, I suggest that we dispassionately consider the possible results of this type of surgery as well as the alternatives.

It's been recognized for over a decade that it is technically feasible to reattach severed extremities and to expect some to survive. Drs. Singer, Finseth, et. al., have nicely reiterated that point in their papers but the papers have not shown that the patients have benefitted by this surgery or that the gain was worth the risk, expense and time and money involved.

Dr. Singer, who incidentally is not describing a true amputation, tells us that "return of sensation has been noted recently and function has improved slowly." He does not say how long the follow-up period was or how much function has returned. The only conclusion which can be reached is that the operated finger survived. Dr. Finseth and his co-workers state that two-and-a-half months after reimplantation the finger had "excellent sensory recovery and mobility." One would like to know how much sensation and mobility this represents.

In his editorial, Dr. Polayes implies that digits with functional and sensory deficits are better than amputation stumps. They may be better than *some* amputation stumps but many finger amputation stumps with good sensation are better than intact fingers with poor sensation or with poor motion: and often, of course, the entire hand is better served by digital ray amputation, leaving no stump.

Drs. Chen of China, O'Brien of Australia and Kleinert and Buncke of the United States and their co-workers have very impressive results to show and there is no question that many of their patients have benefitted greatly from successful reimplantation. They are all agreed with Dr. Polayes that such surgery should be done only in special treatment centers where all necessary facilities are available and where personnel, equipment, time and money are abundant. What the reports from successful reimplantation fail to make clear are the risks of this surgery and what the actual complications are.

I am writing not to speak against this type of surgery but to temper the growing enthusiasm for it: enthusiasm which I have already seen to inspire good surgeons to do harmful things to some of their patients. The world literature is emphasizing the survival rate of reimplanted digits and extremities but it is not accurately reporting on the complications encountered. Among those complications which I have seen personally, or have seen well documented, are death, gas gangrene, persistent infection, causalgia, psychosis and suicide and bankruptcy. Granted that most of the major complications have occurred as a result of major extremity reimplantation and for digital reimplantation the complications have been less severe. Nevertheless, the persistently stiff or insensitive digit can badly handicap an otherwise useful hand. Dr. Polayes has given us some excellent guidelines for selection of patients for this type of surgery. I suggest that we add to these guidelines a pinch of caution and conservatism and a consideration of the alternatives.

Paul W. Brown, M.D.
Bridgeport, CT.

The preceding letter was referred to the authors of the articles in question three of whom offer the following replies:

To the Editor: I am writing in response to Dr. Brown's letter regarding digital replantation.

Microsurgery and replantation are new fields in reconstructive surgery requiring proper instrumentation, special training and frequent practice. Certainly not *all* of us should be rushing out to sew on amputated parts indiscriminately, and neither should the basic principles of reconstructive hand surgery be violated. However, replantation surgery has been perfected to a degree so that we must consider its value in proper perspective.

The case presented in my article criteria on "Microsurgery for Amputated Index Finger," (CONN. MED. 39: 401-402) was an incomplete amputation, but by all other criteria was a non-viable digit. One year after surgical restoration there is good quality sensation with 5mm. two point discrimination, and good function in pinch and grasp. The patient is quite happy with the overall result.

Not all amputated digits should be replanted; however, replantation of the thumb is the best method of restoration. Replantation of other digits must be weighed in terms of many factors. Complications such as gas gangrene, necrosis, infection, causalgia etc., are hazards to be avoided in any surgery involving a traumatized extremity.

We should temper, but not *stifle* the enthusiasm of those of us who are attempting to improve results with nerve repair, pedicle tissue transfer, and tendon repair utilizing expanded vision via the operating microscope. Replantation is but a small part of the new horizon in microsurgery.

"To replant or not to replant" is not the only question, but may provide us with some of the answers.

Joel B. Singer, M.D.
Norwalk, CT.

To the Editor: It is a pleasure to respond to Dr. Brown's letter and to reinforce the caveats contained therein.

A good functional result is the only acceptable measure of successful treatment. An anesthetic, or worse, a painful extremity or digit is a tragic and hollow triumph of technique over good judgment. Such problems are most common in injuries proximal to the wrist, the situation in which it is easiest to rejoin severed vessels. However, the nerves have far to go and, as opposed to digits and hands, successfully replanted arms are few and far between. Our patient has 90° of metacarpal phalangeal motion, 20° of proximal interphalangeal motion, good sensation and functional pinch. He has returned to work and is pleased with the result.

Many of the tragic consequences of ill-advised attempts at replantation can be avoided, if the decision to go ahead is made only by those in a position to and willing to accept the total responsibility for follow-up care of the patient, including both the reconstructive surgery or, at worst, a later amputation.

Thomas J. Krizek, M.D.
Professor of Surgery (Plastic)
Chief, Section of Plastic and
Reconstructive Surgery
Yale-New Haven Hospital

To the Editor: The response to the letter from Dr. Brown restates what has already been stated in the editorial itself as well as in the case presented by Dr. Finseth. I agree with Dr. Brown that many factors have to be considered before digital replantation is performed. Definitive guidelines and criteria have been established and should be followed before embarking on this procedure. It is for this reason that I urge all those who perform digital replantation to share their long term experience and follow up of these patients. Caution, conservatism and consideration of all alternatives have been stressed in the editorial and must be a guideline in every case. Enthusiasm, however, must not be downgraded for this procedure. The chance for a functional good result in the properly selected case becomes greater with experience.

Irving M. Polayes, M.D.

CRMP HEALTH CARE

To the Editor: For some few years I have been receiving propaganda from CRMP and other amateur groups boasting about their accomplishments in improving medical care in Connecticut. I must admit that they have spent a great deal of federal tax money.

I fail to see how their high blood pressure program has benefited more than a few at high individual cost.

Since 1936 I did routine blood pressure with trained RN's, urine examined, chest X-ray for heart size plus family history, etc. This covered a population of about 4,000. All patients were required follow-up by family physicians. This was a daily procedure.

Today, under CRMP, often blood pressures are erroneous without correlation of renal and cardiac status. Follow-up is poor, and it impresses me that amateurs are trying to do a professional task without skills, qualification or responsibility.

I believe their motives are good but physiologic knowledge low.

Kindly have your competent staff advise me if I err in my analysis. Thank you.

I am vitally interested in improving Public Health.

Bernard S. Dignam, M.D.

Enfield, CT.

MORE ABOUT FLU VACCINATION

To the Editor: Having been involved with a program of influenza immunization for employees of a large company for the past twenty years or so, I was interested in the correspondence which appeared in the "Letters To The Editor" concerning the method and dosage of administration.

In the June issue, Dr. George Kraus asked if Dr. Dignam had any proof to the contrary that "influenza antibody levels resulting from intradermal injections are definitely lower than those produced by the subcutaneous and intramuscular routes." This question was discussed in "Letters To The Editor" of the *JAMA*, December 8, 1969, Vol. 210, No. 10, by Dr. Louis Tuft in Philadelphia. He referred to the work of Saslav and his co-workers (Saslav, S.; Carlisle, H.N.; and Perkins, R.L.: "Effects of Dosage and Influenza Content on Antibody Response in an Aged Population," *American Journal of Medical Science* 251:195, 1966). The results of Saslav apparently showed that, although there was somewhat higher hemagglutinin titer in the case of a 1 cc. dose of vaccine subcutaneously than 0.1 cc. of the vaccine given intradermally, the difference was not sufficient to warrant using the subcutaneous method, except, perhaps, as the initial dose.

It is of interest that the Connecticut State Health Department has given booster inoculations of 0.1 cc. influenza vaccine intradermally to State employees.

J. Kenneth T. Ormrod, M.D.,
Medical Director

Aetna Life & Casualty
Hartford, CT.

TONGUE IN CHEEK

To the Editor: I have been uncertain whether to write to you about an article in *Connecticut Medicine.* Perhaps I shouldn't be critical since I turned down the opportunity to be a member of the Editorial Committee. However, if your readers don't comment to you about their reactions, you may not know of their feelings.

Perhaps you published this article to see whether any orthopaedic surgeons read *Connecticut Medicine.*

Yesterday I read the article "The Interface Between Podiatry and Medicine," in the July issue of *Connecticut Medicine.* If you published it with tongue in cheek, it is somewhat amusing. If, on the other hand, you published it as a serious contribution, personally I consider it bad judgment.

John D. Haugh, M.D.

Hartford, CT.

DRUG APPROVAL AND FDA

To the Editor: I was pleased to see the article in your April, 1975, issue on "The Drug Approval Process and the FDA," followed by your May editorial. I appreciate your giving this important topic space in *Connecticut Medicine,* and I hope it interests your reader. I think your choice of material from my testimony was excellent.

Many thanks.

Alexander M. Schmidt, M.D.

Commissioner of Food and Drugs
Rockville, Maryland

DR. ROOT'S PRESIDENT'S PAGE

To the Editor: A couple of months ago I read Dr. Root's contribution "The President's Page" in *Connecticut Medicine* for April, 1975. I thought that this was the most thoughtful analysis of the dilemma which faces the medical profession that I had seen in a long time. I suppose that our job is to be certain that the State gets what it needs and deserves and that we physicians be certain that the State does not encroach upon those prerogatives of the physician that allow him to act in the best interests of the patients.

Incidentally, I think that *Connecticut Medicine* is a great journal; and I hope that I can continue to receive it.

H. Thomas Ballantine, Jr., M.D.
Associate Clinical Professor of Neurosurgery

Harvard Medical School
Boston, MA.

HAIL AND FAREWELL

To the Editor: Because I have left Connecticut to become Associate Professor and Vice-Chairman of the Department of Family Practice at Wright State University in Dayton, Ohio, I regret having to leave the Editorial Board of *Connecticut Medicine.*

The direction the Journal has taken since you have assumed the Editorship, I feel, has been a valid improvement. I feel it is more informative, more readable, and more interesting.

John C. Wright, M.D.
Associate Professor and Vice-Chairman
Department of Family Practice

Wright State University
Dayton, Ohio

Primary Care Task Force—Interim Report

Howard J. Wetstone, M.D.

Introduction

The Primary Care Task Force was appointed by the Commission on Hospitals and Health Care in January of 1974 for the purpose of assessing the status of primary care in Connecticut and delineating current and projected manpower, facilities and service needs on a state and regional basis. It has been charged with developing a comprehensive plan to facilitate equity and innovation in the delivery of primary care services in Connecticut and with considering workable alternatives for accomplishing this goal.

The Task Force was also mandated to evaluate alternative ways to make primary care services available and accessible in all geographic areas of Connecticut—urban, suburban and rural. Some of the methods of primary care delivery being examined are the traditional solo fee-for-service practice, primary care centers and/or satellites affiliated with hospital outpatient departments, neighborhood health centers and group practice plans, both fee-for-service and prepayment.

The Task Force is composed of twenty-two individuals with expertise in the area of primary care including family practitioners, internists, pediatricians, a radiologist, hospital administrators, a local health director, a dentist, a nurse educator, a nurse practitioner, administrators of health care centers and others in academic and state health administrative positions.

Initially each member of the Task Force was interviewed by the Commission planning staff to discover individual views on priorities, to clarify plan development procedure and to obtain data on personal involvement and interest in primary care. When many common areas of interest surfaced the staff prepared a detailed summary of interrelated factors in primary care which pinpointed these major concerns. It was decided that in order to deal effectively with specific areas of primary care on an in-depth basis, five subcommittees composed of Task Force members and staff would be formed. The entire Task Force and its subcommittees have met approximately thirty times to determine direction and procedure for developing a state plan for primary care; to discuss the principal issues and complexities involved in providing these health services; and to bring forth a number of viable suggestions and recommendations.

In no manner can this report be considered final. As innovative recommendations emerge and as the HMO Act of 1973, the Health Manpower and Health Planning Acts of 1974 and the pending National Health Insurance legislation begin to affect the pattern of health care, there will be new and continuing issues to be resolved in order to satisfy the primary care needs and demands of the consumer.

The Committee on Organization of Primary Care is in the process of following up responses to a questionnaire sent to each primary care physician in the state. As soon as this is available, it will be analyzed and used as the groundwork for specific application of the conclusions of all other subcommittees to the primary care plan.

The most pressing need of the health care system is to readjust its priorities without losing any of the enormous technological gains of the past twenty years. An appropriate emphasis on disease must now be shared with an equal concern for health. The stress on crisis and acute intervention must be combined with a renewed interest in continuing or primary care. Primary care is a major segment of a broad scope of health organization and services and operates as the prime continuing source of most care.

Definition of Primary Care

Primary care includes both first contact and continuing care for the majority of health needs of most people of all ages. What makes primary care unique as a professional specialty is not where the care is given or which primary tasks are being performed at a given time, but whether these tasks are related to the continuing health needs of the patient by the provider(s). According to this definition, primary care is more than first-step management for acute patient problems and follow-up management of current problems: it also includes chronic disease management, rehabilitation, health education, the prevention of disease and referral to specialists when indicated.

The provider of primary care concerns himself with the patient's overall physical and mental health and related social problems. He functions as coordinator for the recipient of care; even when he makes a referral to specialty or supportive services, he still retains the overall ongoing general, if not the specialty, responsibility for the patient.

DR. HOWARD J. WETSTONE, Director, Ambulatory Service, Hartford Hospital; Chairman, Task Force on Primary Care, State of Connecticut, Commission on Hospitals and Health Care. Associate Professor, Department of Community Medicine and Health Care, University of Connecticut School of Medicine.

The manpower whose chief responsibility is to furnish the continuing primary care needs of people includes the family physician and/or general practitioner, the general internist, the general pediatrician and those nurse practitioners, physician's assistants* and staff or visiting nurses associated with them. Some obstetricians perform a similar function for their patients during their child-bearing years. Although other physicians, nurses and assistants often perform isolated primary care tasks for their patients they tend to confine themselves to their specialties. The same applies for the dentist in his ability to provide primary care. A large variety of health providers serve as referral sources for primary care patients including, but not limited to, other medical specialists, dental specialists, community health care workers, nutritionists, pharmacists, podiatrists, psychologists and social workers.

Some Issues in Primary Care

In many respects Connecticut is more adequately supplied with overall health care resources per capita than many other states. Although previous figures indicate that there are over 2,000 primary care physicians—internists, pediatricians and family practitioners—currently providing direct patient care in Connecticut, considerable evidence suggests that their distribution and accessibility can be improved. Despite the superb quality of care and the richness of resources in some areas, many individuals and families in these areas, as well as in other areas with lesser resources, are not receiving adequate continuing primary care and may rarely or never have an encounter with a primary provider. Still others may have difficulty in conveniently receiving primary care task services which are often rendered in a discontinuous, crisis-oriented manner as in emergency rooms of hospitals. Although the 1974 data on primary physician to population ratios has not been completed, it can be deduced from previous data that significant geographic variations in these ratios exist and that in some of the sparsely populated areas and in the inner cities, care may not be available or sought until the patient is seriously ill or injured. Primary physicians in these areas may be nonexistent and replacement of the semi-retired and deceased solo family physician by new practitioners is unlikely and difficult to achieve.

The geographic maldistribution of primary care physicians cannot be remedied solely by the production of more physicians in our medical schools; there is no assurance that an increased supply of physicians would result in graduates automatically selecting a primary care specialty and locating in areas of need or where population groups requiring their services exist. Indicated instead is a better balance of primary and specialty care education and training with a large percentage of generalists oriented toward primary patient care serving as role models both at medical school and in ambulatory practice settings. The idealism of the new medical student needs to be channeled before it becomes otherwise co-opted or redirected. A combination of improved distribution of physician manpower and the transferral of many primary care functions to new health professionals may well lead toward greater adequacy in the system.

Access is the most crucial element in effective organizational arrangements. There are still barriers between those who provide care and those who need it. Common barriers to access are geographic location, cost of services, transportation and cultural factors including language differences.

When it takes more than thirty minutes to reach a doctor's office or other primary care unit; when public transportation is lacking; if the fees-for-service are beyond the patient's means and not covered by third party payers; when it takes days to weeks to get an appointment; when waiting times for receipt of services are excessive, primary care is no longer really accessible.

Although emergency rooms in the community hospitals of our state may offer easy access, they tend to be crowded and are not designed to provide much more than one primary care function—immediate intervention in the acute case. All levels of society, including the upper and middle classes, are increasingly faced with the problem of searching for a source of medical help each time they have an immediate need for it. Often a different provider is encountered for each occasion.

The Task Force is exploring solutions for improving availability of and access to care, for more effective methods of organizing services and for cost containment. Although there is no single model of primary care delivery which has demonstrated its superiority over all other approaches, several viable alternatives for restructuring primary care which may have a direct effect on distribution and accessibility of services are being studied. Ideally, there should be available throughout the state primary care services which offer a route of prompt entry into the health care system. These could include primary care units in existing hospital centers, neighborhood or community health centers, local health departments, private physicians' offices or group practices (either fee-for-service or prepaid). The setting is not nearly so important as the provision of readily available and continuing care for the patient.

**The term "physician's assistant" is used to include physician's associate and other related disciplines.*

In considering the equitable distribution of services the Task Force is dealing with such complex issues as the difference between patient demand and need; geographic, socioeconomic and cultural disparities within population groupings; the inadequacies and unavailability of specific services; the utilization of manpower with respect to educational patterns and professional interactions: and the ability to support the resources for needed care and to pay for the services received. Some additional major areas which have surfaced in our examination of primary care in Connecticut, particularly in the Review Committee, and which may emerge as potential recommendations for change are:

1. Health education is a major responsibility of the primary health care team. The individual should be responsible for the prevention of his own disease; for his own self-maintenance through self-care; and for extensive continuous comprehension about health matters.
   A. A comprehensive continuous health education approach directed toward the consumer should include:
      (1) Self-maintenance or medical self-help when a physician is unavailable. The provision of sufficient information to the consumer so that he may use the system appropriately.
      (2) Knowledge of how to prevent disease.
      (3) Information on when and how to seek care from health providers.
      (4) A state-mandated plan of health education according to agreed-upon standards to be implemented by local personnel beginning early in the public education of a child and far exceeding current programs.
   B. An information service such as a health hot-line to offer immediate relief for health anxieties.
      (1) Tapes could be designed to provide the best available information on common ailments and diseases.
      (2) The service could be manned by a primary care provider who would offer an opportunity for the ventilation and appraisal of problems, thus alleviating patient anxiety.
      (3) Counselling service to assist people in using the system including: how to purchase health insurance; how to enroll in available plans; how to pay differentials, etc.
2. The encouragement of the establishment of voluntary group practices where the professional, administrative and financial functions of primary care may be integrated and health providers may work in combination for the benefit of both the provider and the recipient.
3. Economic incentives by federal, state or other sources to promote new systems of financial organization such as prepaid comprehensive health care plans, community health centers, medical care foundations and others.
4. Government aid to programs which institute, expand or streamline the training of primary care physicians, nurses, dentists and others to effectively increase primary manpower resources.
5. Encouragement of the medical schools and teaching hospitals to experiment with new models of care designed to meet current needs and to significantly increase their production of primary care physicians by focusing their capacity for excellence in this direction.
6. Government incentives for the training and utilization of new non-physician personnel who extend manpower capabilities in primary care.
7. The development of appropriate reimbursement schemes for all health personnel and the restructuring of payment priorities of third parties to coincide with the needs of primary care recipients. The working conditions (environment, status, remuneration, hours, etc.) of primary care providers must be made reasonably competitive with their specialty-oriented peers to encourage people to become primary care providers.
8. A concerted effort should be made through professional organizations to assist individual health providers in understanding their own roles in terms of realistic fees, open recording of information and inconsistencies in referral systems and standards of treatment. In turn, the needs of the professionals must be defined and transmitted to the society they serve. The primary care physician may serve as a specialist in the secondary and tertiary systems with peer status equal to other specialists.
9. The clarification of the roles and functions of physicians, dentists and their professional colleagues and the promotion of the health care team concept whereby the physician works in a collaborative arrangement with other health professionals.

   Unlike many specialty areas the field of primary care does not always have a single, clearly-defined team leader. Leadership varies with the immediate setting in which the patient is seen. Therefore, while the physician remains central, the person in charge at any given time may be any member of the team.

10. Determination as to how to best use health record systems to the advantage of the patient and the provider. The data needed to assure continuing care for a mobile society, without violating principles of confidentiality, must be centrally coordinated.

    A personal health data baseline should be established for everyone in the state. This would include a health profile for each person and maintenance of a health data base designed in accordance with predetermined basic requirements. Every means must be taken to preserve the rights of the patient to privacy. A coded access system open only to patient-authorized providers would preserve identity and confidentiality.

11. Promotion of a patient advocacy system using a knowledgeable local health advisor.
    A. Medical information must be interpreted in terms which the patient understands.
    B. Access and economic coverage problems could be made comprehensible.
    C. A feed-back loop between the patient and the provider of his choice could be implemented by the local health advisor.
12. Community outreach of primary care services should be provided when necessary.
13. It is imperative to recognize that primary health care must always be appraised in the perspective of the total system. The heart of a problem may be essentially socioeconomic—one of housing, education or employment—rather than solely a health issue.

With the eradication of some of the current roadblocks to the utilization of high quality primary care services and with the reordering of the priorities and resources enumerated above, the primary care system can become more responsive to the needs of the people.

In all of these areas the Task Force fully recognizes that the primary care system will need to continue to be pluralistic in nature, with multiple approaches to providing care. The "bottom line" must be quality patient care: the mechanisms to provide it may vary.

Finally, the six recommendations[3] we feel are most important are:

1. The Commission on Hospitals and Health Care should encourage professional health care providers, community groups, hospitals and other institutions to sponsor, develop or expand primary care services and increase their availability to those who currently lack access to them.
2. The Commission should support rational reimbursement, based on true costs, for primary care services of any kind by third party payers; this would include both rate setting for hospitals and welfare rates as set by the Commission and third party payments by the "Blues" and private insurers as determined by the Insurance Commissioner.
3. Incentives should be developed for primary care providers, in any model of organization, to locate in areas where needed.
4. Financial support should be provided for professional and post-graduate education in both the traditional and new areas of primary care.
5. Incentives must be provided for the formation of primary care groups by such methods as tax exemptions, pass-throughs, competitive rates and the provision of continuing educational relationships with hospitals and teaching institutions.
6. The Task Force advocates that, when its recommendations have been completed, a state "Primary Care Institute" be established to replace the Task Force and to maintain an ongoing determination of primary care needs; serve as a clearinghouse; recruit manpower; and suggest financial incentives. The institute could serve as a permanent advisory body to the Commission or other relevant governmental agency.

Of special concern to the CSMS might be a recommendation[4] dealing with joint practice legislation:

When a member of the Task Force requested clarification of the legislated responsibilities of the physician, physician's assistant, nurse practitioner and emergency medical technician, Committees 2 and 3 on the Interactions of Professional Manpower and Recruitment of Professional Resources were combined to investigate the possibility of a joint practice act or some form of combined boards of licensure for the state. Such a statute would coordinate the practice requirements for physicians, physician's assistants, nurse practitioners, emergency medical technicians, and others in a combined statute. The initial phase, in a relatively uncharted area, would be a joint practice board which would include all the healing arts and all boards governing health professionals. The prime objective would be the recommendation of a policy decision to support combined practice acts.

The new committee met to discuss the status and functions of physician's assistants and nurse practitioners and to review similar approaches and experience in coordinating this legislation by other groups both in Connecticut and elsewhere. The committee examined the advantages and disadvantages of a joint practice act by further scrutiny of the experiences of other states. After considerable study the following recommendations were proposed on January 29, 1975 for consideration by the Task Force.

1. The concept of a new joint practice act and combined licensing boards for Connecticut should not be promoted at this time. There are other issues which need to be resolved first, especially the extended roles of the nurse practitioner, physician's associate, physician's assistant, pharmacist and dental hygienist.
2. Therefore, communication among health care providers should be encouraged. A working group should be formed with representatives from all the health practitioner groups to review, discuss and make recommendations for action on the current issues. The Task Force should continue to participate with other groups in this evaluation process. Perhaps the Connecticut Joint Practice Commission could coordinate the group if it is within their scope; otherwise, another coordinating agency would be sought, such as the state health department.

No statement of mine can delineate the medical cure for the primary-care deficiency disease better than one made by Robert Petersdorf, M.D.[5] President of the American College of Physicians who in the May, 1975 issue of the *Annals of Internal Medicine* concluded as follows: "We should aim to make the practice of primary care medicine—whether it be by family practitioners, general internists, or pediatricians—as attractive, prestigious and rewarding as subspecialty practice. This should be the major goal of medical schools, professional organizations, accrediting bodies, and government. If it can be reached, many of our health manpower problems will be relieved." It is our hope that Connecticut's physicians, organized medicine, our two medical schools and the citizens involved in health planning and control will recognize the problem and quickly address themselves to its solution.

The report I have summarized was presented to the Hospital Commission on May 27, 1975. To date it has made no comment and taken no action on our recommendations. During the summer of 1975 the following activities were to have been carried out:

1. A committee to study alternative models of health care delivery in the light of the data derived from the study of distribution of primary care physicians was constituted under the chairmanship of Dr. James E. C. Walker.
2. Mr. Cornell Scott's committee began a study of the distribution of primary care nursing and physician assistant personnel.
3. Dr. H. Parker Lansdale was appointed to chair a committee to review the educational resources in the state for the preparation of primary care physicians. This committee began an exploration of the situation with key personnel at University of Connecticut and Yale Medical Schools and selected teaching hospitals.
4. Analysis of the physician data (to culminate in seven reports) continued.

Any suggestions any CSMS member may have for the Task Force to consider are welcome and may be addressed to the author or to the Editor who will forward them.

Our basic conclusions are summarized in a letter[1] to James D. Whitten, Chairman of the Commission on Hospitals and Health Care, introducing the report to the Commission:

1. There is a shortage of primary care services in some areas of Connecticut. A detailed analysis of the current situation will be available soon as indicated in the report of Committee One. Although most of our citizens can obtain acute primary care (often in emergency rooms) and almost all have access to very high quality specialized medical care, many cannot find entry into a continuing general care pattern as defined by the Task Force. There is evidence that this number is increasing.
2. While maintaining high standards of specialty health care in the state, new programs instituted to alleviate the primary care shortage may add initially to the overall cost of health care until they can ultimately produce a reduction in the quantitative need for specialty care. The recruitment of trained personnel into needed areas will require some type of inducement not now present. Training new primary care professionals, instituting new patient-education programs, capitalizing new practices and expanding preventive programs all cost money. Providing primary care for those not now receiving it will initially cost more than *not* providing it. This is especially true in outreach programs.
3. Training needed new primary care personnel instead of specialists is not comparable to making subcompacts instead of limousines since the primary care generalist is not a slower moving or less sophisticated model than the specialist. In fact, new primary care health personnel will come from the same intellectual pool as, will work as hard as and will expect to receive material and status

rewards reasonably comparable to their specialty-oriented peers. Since the present high cost of care is in part based upon a third party system emphasizing inpatient care and procedures a decrease in overall health expenditures will only come about if primary care teams are able to institute a decreasing demand for high technology by providing continuing and preventive care for their patients. There is some evidence that this can happen, but the effect will only be noticed after an initial period of higher total cost.

4. We recommend a pluralistic approach in designing new styles of institutional, group or individual primary-care practices tailored to the needs of our various regions. These may include community based HMO's, conversion of hospitals to health centers and increasing utilization of new health professionals in all settings. The Commission should bend every effort to encourage and support expansion of the training and practice of primary-care professionals, their recruitment into areas where needed and their experimentation with new practice arrangements where appropriate. Present rate controls, unrealistic welfare and other third party reimbursements of the true costs of primary care and over-emphasis on other health issues will lead to a perpetuation of the present situation.
5. When confronted personally with the very complex, often time-consuming and relatively expensive process of health care, many justifiably upset citizens have been tempted to propose single simplistic solutions for our health care problems. Some of these might actually endanger the quality of care for the sick they are intended to assist. To permit sound comprehensive planning the Commission must devote a large part of its resources in conjunction with our medical schools, current providers of primary care and regional consumers if it is to effectively influence the Statewide problems in the Primary Care field.

I am grateful to all of the members of the Task Force who have helped in the writing process with especial thanks to Staff member Naomi B. Golden, M.P.H., Robert B. Bruner, Executive Director of Mt. Sinai Hospital, Hartford, Chairman of our Review Committee, and James E. C. Walker, M.D., Head of Community Medicine at University of Connecticut Medical School, who led the Committee developing data on primary care practice patterns.

The 22 member Task Force serve without pay or travel allowances. They are:

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Howard J. Wetstone, M.D. - Chairman
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In addition 5 consultants were:

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Four Commission Staff people involved with our work were: Naomi B. Golden, M.P.H., Barbara F. Fletcher, M.P.H., Sarah S. Hirakis, M.P.H. and Norman Armondino.

We had 5 committees and chairmen: Committee on Distribution of Primary Care Physicians and Dentists, James E. C. Walker, M.D.; Committee on Interactions of Professional Manpower, Cornell Scott, M.P.H.; Committee on Recruitment of Professional Resources, Edward A. Felder, M.D.; Review Committee, Robert B. Bruner; Committee on Models of Health Care Delivery, Julian S. Kaiser, M.D.

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2. Ibid: pp 4-9.
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80 PRIME ACRES

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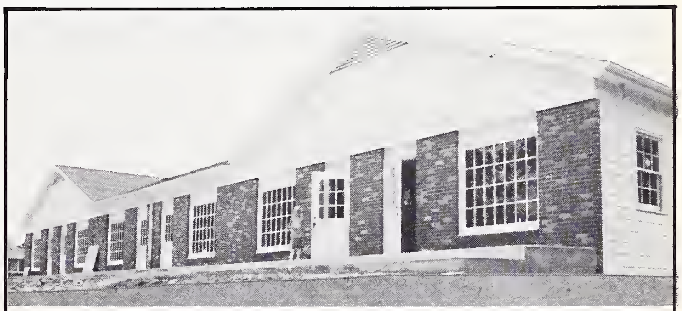

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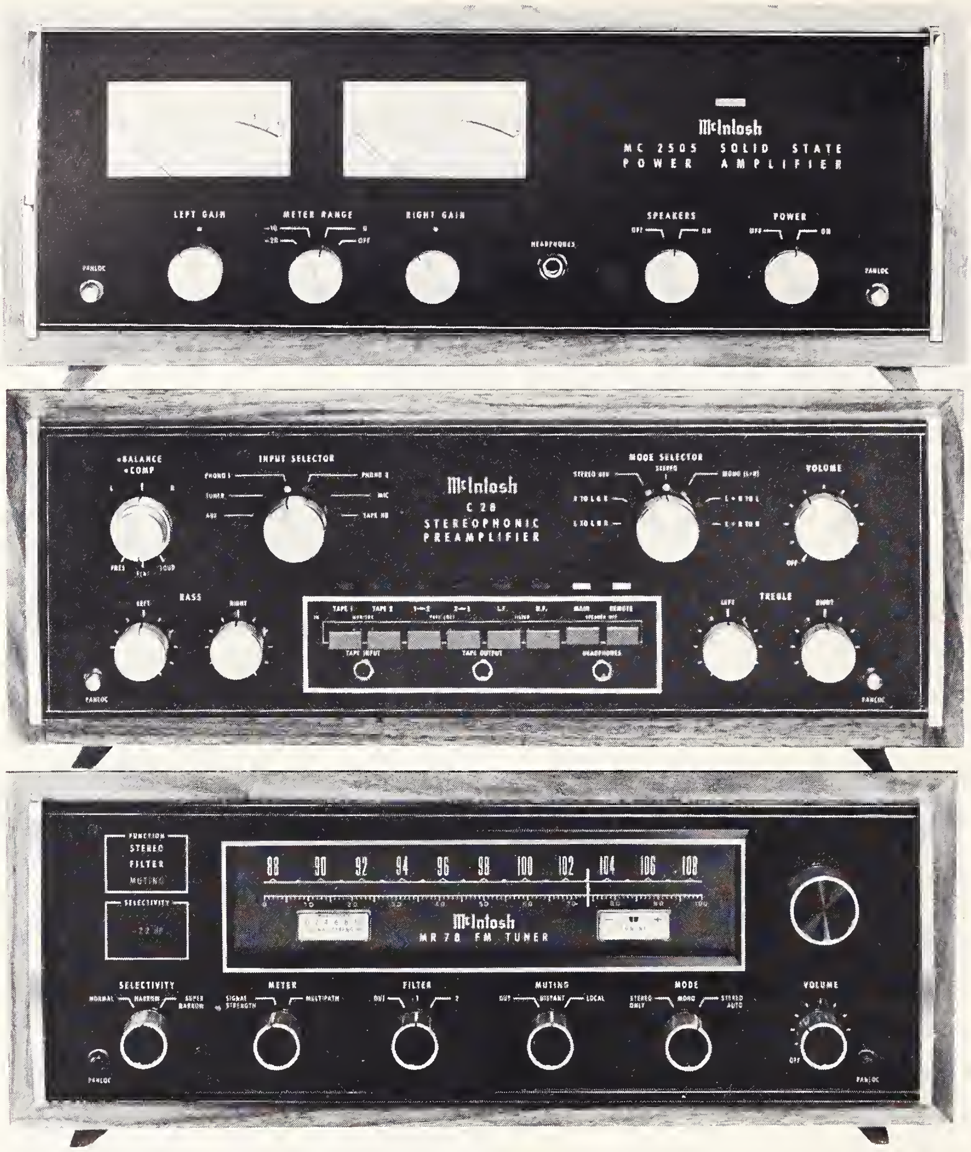

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Health Education: Moving To Center Stage

Lowell S. Levin, Ed.D., M.P.H.

Abstract—Health education is an idea whose time has come. No longer can we ignore the crucial factor of human behavior in health promotion, disease prevention, treatment, and rehabilitation. Our past efforts have been largely fragmentary and usually viewed the layperson as a passive recipient of information. New knowledge of the complex process of health behavior change and new goals in health education and health consumerism are contributing a fresh vitality to an old undertaking. Connecticut is in an excellent position to take advantage of this and contribute innovation and leadership.

Introduction

The practice of health education has been around a long time. And yet there appears to be abundant confusion as to what it is, how it works, where it happens, who is responsible for it, and whether it makes any difference. The confusion is not limited to laypersons; many health professionals as well find it difficult to put their finger on just what health education is all about. Some remember health education as a "rainy day activity" reluctantly undertaken by the coach in the high school gym. Health education for others brings to mind posters or TV spot warnings about the dangers of smoking or venereal disease or promoting milk or green leafy vegetables. Perhaps the pamphlets in physicians' and dentists' waiting rooms are regarded as health education by still others. Most of us have the general impression that whatever health education is it is most certainly "*do*sy and *don't*sy." It always appears to advise or admonish; it speaks to good habits and dangerous practices; or it extolls the virtues of checks and check-ups. In some form or other these views constitute a popular collage of beliefs about health education. And it is not an altogether invalid one, if we can judge from the plethora of such approaches and media currently in use. But it would be a most incomplete picture of what is going on and one which does not reveal the wide range of contemporary purposes, methods, and technologies now being used. Nor does such a picture take into account exciting new research, demonstration and evaluation efforts to determine ways of helping people avoid health hazards, cope with disease, and effectively use the health care system.

Present rationale for health education

Many, probably most, of the health problems (diseases and traumas) people encounter involve a major behavioral factor in their etiology as well as their treatment. Epidemiologic and behavioral research on these attributes of the host factor, however, had received relatively less attention than biological and engineering work on agent and environmental factors. Historically, this is explainable in terms of the morbidity patterns of earlier times when infectious diseases were (still are) more easily controlled through biological (immunization) or social (water purification) interventions. With the emergence of chronic disease, it became apparent that an individual's behavior was the key to control at several levels of prevention, treatment, and rehabilitation. As apparent as this fact was, it was even more apparent that changing human behavior would be a complex task—a challenge which must involve considerably more than the information dissemination techniques of the past. Matters of perception, attitudes, and beliefs so important in health behavior have begun to emerge as a new arena for research in preventive medicine and public health.

Since World War II our knowledge of the behavioral component in health and disease is represented in a burgeoning literature on symptom recognition, delay in seeking care, lay referral patterns, illness perception, patient compliance with medical regimens, health behavior models and much more.[1] Further, these aspects of health behavior have been viewed from many disciplines including anthropology, sociology and social-psychology. We have developed a rich conceptual base for improving the quality and impact of health education in America. Indeed, we have come a long way at least at the level of concept and theory in health education. Health education has largely dropped its moralizing and pedantic tone; it employs a more sophisticated strategy of behavior change; there is clearly more effort made to involve consumers in planning and evaluating health education programs; more emphasis is being given to improving use of services as well as disease prevention; and, more recently, health education has focused attention on raising the competence of laypersons in self-care techniques.

Health education has many goals, a fact which certainly has contributed to divergent views as to what

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it is. The most commonly expressed purposes are to:

1. Contribute to self-fulfillment of individuals and promote their well-being as individuals define this;
2. Enhance the ability of people to cope effectively with health promotion, health maintenance and illness control;
3. Reduce undesired risks of disease and illness;
4. Help people maintain personal and civil integrity while receiving health care; and,
5. Create more active individual and community participation in the health system by increasing a) personal competence in self-care, and b) social skills in working within the formal health system.

All of the above goals are based on a belief in the integrity of the individual. The key values here are that people have the right to determine their own health destinies within limits of social responsibility; and that good health care requires active, competent consumers. This means that health education is concentrating on building individual competence in quality decision-making rather than pushing people to conform to professionally set criteria of what they should do or not do. This also means that health education assumes that laypersons are an integral part of the health care system and as such, must have many skills heretofor limited to professionals.

It is clear that health education is in a period of rapid evolution, conceptually and technically. The historical origins of recent changes must be the subject of another paper. But it is important to point out that the civil rights movement of the 1960's and the women's movement of the 1970's have given special impetus and direction to health education's current emphasis on the individual as the primary resource in health. And most recently, considerations of cost containment in health care have placed a special urgency on accelerating effective health education. Victor Fuchs, the noted medical economist, put it this way:

> By changing institutions and creating new programs we can make medical care more accessible and deliver it more efficiently, but the greatest potential for improving health lies in what we do and don't do for and to ourselves. The choice is ours.[2]

The "do for and to ourselves" concept is a reflection of the labor intensive nature of health care and the obvious implication that health care cost reductions must occur through a large share of health care being provided outside the framework of the professional domain—by educated laypersons on their own behalf. On the national scene and in Connecticut a growing emphasis in health education on self-care or self-help can be predicted. Indeed, funding for research and demonstration in self-care is now being sought by Yale's Department of Epidemiology and Public Health.

How does health education work?

Health education today conforms to the usual concepts and strategies fundamental to good planning in public health intervention. A problem or need identified in a community is defined epidemiologically; that is to say, its distribution in the population is determined. The multifactorial etiology of the problem would reveal the behavioral factors associated with risk. Further study would define public beliefs about the health risk, levels of skills and knowledge, and individual and community expectations of assistance (including aspects of acceptability and accountability of possible interventions). In addition, data would be gathered on the decision-making style and patterns of communities involved. Based on such information, a plan involving laypersons and professionals would emerge with effective community governance. An evaluation process, directed at measuring activities, outcomes, and costs would be built in from the onset.

The health education planning model is a socially oriented one which means that justification must be rooted in the public's interest and priorities. The model is an ethical one in the sense that within socially responsible limits, individual choice is preserved and that individual and community integrity will be enhanced. These are more than pious words. They are not easy to implement. The temptation of professionals to dominate individual and community health decision-making is strong and persistent. It is difficult for health professionals to accept the possibility that the value of individual choice in health and the value of freedom to deviate, are of a higher order than the value of a disease-free world.[3] Health education strategies increasingly reflect an awareness of this potential threat to the integrity of individuals and as a result build in methods to limit an over-zealous pursuit of health which disregards other personal priorities.

The contemporary approach to health education described above is seldom fully achieved in practice. We are still very much a product of our professional histories and biases. Further, we often must operate within rigid institutional and budgetary constraints. Thus, progress in Connecticut has been uneven. On the one hand, we have benefited by Byler et al.[4] in their study of children's health interests, concerns, and problems useful as a basis for school health curriculum planning. On the other hand, few schools in Connecticut, to my knowledge, have adopted an "inquiry method" of health education—an approach which would give children skills through experience in defining a problem, collecting data, testing, hypothesis, and interpreting results in terms of their personal and social decisions. In Connecticut as in the rest of the nation, *school* health education appears to be lagging behind *community* health education programs. There are many technical and philosophical reasons for schools not having moved beyond the fact-teaching stage toward an approach of discovery and involvement as put forward by Bruner.[5] Nevertheless, school health education has, in the long run, the greatest potential for achieving most of the goals set forth earlier. In particular, children can learn skills in health care which could result in helping them avoid the debilitating health passivity and low health competence of our adult population. Mary Ann Lewis' work in California shows us the way to begin to build the kind of competence and confidence necessary to have a self-protected society where health responsibility is centered in each citizen.[6] In the Lewis approach, children starting in the early grades would learn to take the initiative for health care decision from recognizing symptoms to participating in treatment decisions. Such a plan could be broadened to teach human anatomy, physiology, pathology, and elements of clinical medicine, using the nursing suite as a clinical education facility. The goal would be to produce a young adult with a wide range of self-care competencies at the primary care level. This would be a far cry from the current practice of school health education which apparently views such skills as dangerous or taboo. Physicians and nurses in Connecticut can help encourage and strengthen a new dimension in school health education; indeed it is their technical inputs which are so critical in moving school health education into the mainstream of health development.

Where is it happening?

Community or public health education, more closely identified with public health interventions in general has, as noted earlier, an epidemiologic orientation which offset somewhat the temptation to present health "facts" as unchanging facts or to offer canned programs. But it wasn't until behavioral research revealed failures of information campaigns to impact on health practices that health education took on its present form. *Public* demand for specialized health education services (smoking, obesity), *consumer* demand for techniques in health planning and operations (quality control, accountability), and *patient* demands for self-care competence (diabetes, stress management) resulted in an explosion of activity. Thus health education has become an established program in health departments, voluntary health agencies, hospitals, and ambulatory care centers. In some instances, group practice and H.M.O.'s[7] have undertaken patient education programs. Physicians' offices, too, have been the locus of exciting health education efforts.[8] But perhaps most impressive of all has been the popular health education movement generated by public demand for "how to do it" health information and skills. A recent review of the health literature for laypersons shows a surprising upturn in the volume and sophistication of these books and treatises. Prime examples are *Our Bodies, Ourselves,*[9] *The Home Health Handbook,*[10] *The Tooth Trip,*[11] *Without Prescription,*[12] *Drugs from A to Z,*[13] and *The People's Handbook of Medical Care.*[14] Health, disease risk, and the process of medical care itself are being de-mystified and concepts and skills heretofor in the professional domain are being made available to laypersons. There are, in fact, programs of adult education in health where the conceptual base is far broader than the old first aid programs of past years. The most noteworthy of these is the Reston, Virginia program under the direction of Dr. Keith W. Sehnert.[15] The program is called the "activated patient program."

Self-care, self-help or so-called mutual aid organizations offering a variety of educational services are the most recent addition to the health education resource scene. Blue Cross and Blue Shield of Massachusetts provide a good picture of the scope of such organizations in that state.[16] Similar agencies can be culled from the series of directories published by New Haven Health Care, Inc., for the New Haven area in Connecticut.[17]

Therefore in answer to the question of "where its happening"—health education is virtually pervasive in our official structures in health, in the wider venue of human services, and in the open public domain.

Has health education been effective?

There is an established ethic that education is a good for its own sake—the more of it, the better. But health education viewed as a highly utilitarian brand of education has a specific job(s) to do. It is, after all, just another health development or disease control tool and as such must bear scrutiny from an effectiveness and *cost* effectiveness standpoint. Anyone who has worked with evaluation of educational outcomes, however, knows how difficult a task this is. Health education evaluation for years was content to count the number of activities as basis for evaluation e.g. numbers of pamphlets, audience counts, etc. During the last 20 years, more interest focused on outcomes, first in terms of knowledge and attitude changes and then in terms of actual behavior change. But ethical and technical considerations always have constrained the use of control groups in the community or "human laboratory" setting. And in instances where it is possible to experimentally test educational methods, the populations served are limited e.g. smoking clinics. Nevertheless, the introduction of health education as a reimbursable cost in hospitals and H.M.O.'s requires some indication of benefit. As a result, investigators like Green[18] have rationalized an approach to cost benefit accounting in health education. But while these new techniques are useful for measuring certain behavioral outcomes, they are not geared to examine the impact of health education on decision-making skills and on those skills associated with an individual's ability to more appropriately and effectively use the health care system.

Health education is becoming a sophisticated and expensive technology. Burgeoning research and demonstration now include health education aspects of chronic disorders, acute illness, mental health, pregnancy and family planning, environmental health, preventive health practices, communication, community organization, and self-care, and many other concerns.[19] Evaluation technology has received special attention in university centers of health education research in Connecticut, as in the nation. But, again, we need a broader approach involving practicing health workers and educators. The reality test is still in the community.

For many years the Yale Department of Epidemiology and Public Health from the days of C.-E.A. Winslow and Ira V. Hiscock to the present has prepared health education specialists, many of whom have remained in Connecticut. Such specialized personnel are never too abundant, but we are comparatively well endowed with talent and leadership. With hoped for federal assistance through newly proposed legislation S.1467 ("National Health Education and Promotion Act of 1975") and S.1521 ("National Health Education Policy and Development Act of 1975") we may for the first time have the fiscal support to mount a significant effort. Connecticut health professionals certainly will be called upon not only to support the expected upsurge in health education activity, but to actively work at it!

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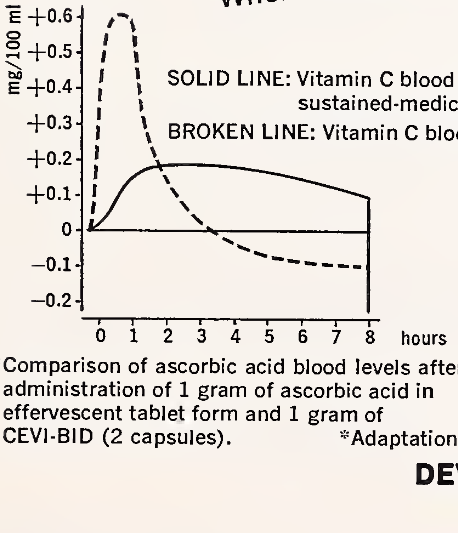

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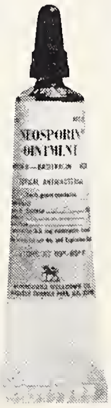

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The Connecticut Cancer Epidemiology Unit

J. Wister Meigs, M.D.

Abstract—The Connecticut Cancer Epidemiology Unit (CCEU) was established in 1974 as the research arm of the Connecticut Tumor Registry (CTR).

Connecticut Cancer Epidemiology Program Council members are appointed by the Council, Connecticut State Medical Society; Commissioner of Health; and Deans, University of Connecticut and Yale medical schools. CCEU is attached administratively to the Yale Department of Epidemiology and Public Health. Early interest in cancer in Connecticut stimulated formation of CTR in 1935. Many agencies, including American Cancer Society, encouraged CCEU formation. Nationally, CCEU and CTR are part of the SEER group of population based cancer registries supported by National Cancer Institute.

The Connecticut Cancer Epidemiology Unit, established in 1974, is part of long continuing efforts toward better understanding and control of cancer. To be effective, national programs require the creative involvement of people at the local level, and Connecticut's history is particularly pertinent in that regard.

Early Work in Connecticut

In 1930, "a group of individuals interested in the cancer problem organized the Cancer Committee of New Haven in cooperation with the New Haven Board of Health."[1] Initially, the Committee was chaired by Dr. Ira Hiscock, and was sponsored by the New Haven Foundation as its first venture into the health field. Broad community involvement, especially from business and industry representatives, made it clear that cancer and its problems were recognized by people outside the health professions, who would work actively toward solutions. The Commissioner of Health of Connecticut, Dr. Stanley Osborn, served on the Committee, and was instrumental in establishing the Connecticut Tumor Registry as a logical sequel to the New Haven efforts.

The Connecticut Tumor Registry

The Connecticut Tumor Registry (CTR) is one of the State's great scientific resources. It originated because of widespread, articulate understanding of the need for a cancer registry based on the total population of the State. Many members of the New Haven Cancer Committee testified at legislative hearings in the mid-30's. The key operating forces were to be the members of the Connecticut State Medical Society who, through hospitals, would report their cancer cases; and the staff of the State Health Department who would record and analyze them. With state-wide professional and lay sponsorship, several pieces of legislation were passed starting in 1935. The Health Department first searched all death certificates and hospital records from 1935 forward. Registration of all newly diagnosed cases began in 1941. For the first 6 years, up to about 37% of cases were diagnosed from death certificates only.[2] This tended to slightly inflate 1935-39 incidence rates for cancers that were almost always diagnosed correctly on death certificates and had an average survival of more than a few months. Such cases, which started before 1935 but were not diagnosed in Connecticut until the time of death, tended to add most to 1935 incidence and to decrease thereafter. This bias was accompanied by an opposite source of error. Cancers not diagnosed during life and not included as causes of death were missed altogether. The relative strengths of these biases are uncertain, suggesting cautious use of 1935-39 figures. Nevertheless, results from early years are particularly useful for study of secular trends in cancer and in searches for environmental risk factors related to industrialization. Over the years, registration of patients during life has increased to more than 98% of all cases registered. Greater precision in staging or extent of disease at diagnosis, histological confirmation approaching 100% for many cancers, more complete follow-up and many other improvements in registration have contributed to CTR's reliability and usefulness in cancer epidemiology.

From the beginning, Connecticut hospitals and their medical staff members have cooperated fully. The Connecticut State Medical Society's Cancer Coordinating Committee planned and provided educational and communications support for physician involvement. An early step was to establish tumor boards, or clinics, to focus physician attention on cancer and its prompt reporting. The accuracy and completeness of CTR data soon attracted national attention. The National Cancer Institute began supporting studies based on Connecticut data and for

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many years has also provided direct support for Registry operations, to help toward the essential first goal of maintaining complete accurate registration. Over many years, the State Department of Health used categorical federal funds to support Registry growth, and reorganized its internal structure to encourage it. Dr. Harold Barrett developed policy and administrative changes that led to the Registry becoming part of the Chronic Disease Control Section. During the same period, Drs. Matthew Griswold and Henry Eisenberg greatly extended the scientific contributions, including monographs and journal articles presenting Connecticut's experience with tumors.

In recent years, Registry staff have been pressed by increased operational demands without commensurate budget increases. It became more difficult for them to take advantage of the research opportunities inherent in their data. Moreover, they had insufficient time to develop mutual interests with and for oncologists and cancer epidemiologists. For example, one of the side-effects of the third party payments was to make it harder for hospital staffs to justify the time for the tumor clinics at which joint Registry and medical staff interests could be discussed.

In 1971, discussions were begun among several groups concerned with cancer to explore ways of enhancing the potential of CTR for both research and service. Principal participants were the State Medical Society, the Registry, and the Biometry Branch of NCI. These discussions also included the Connecticut Division of the American Cancer Society, the University of Connecticut Medical Center, and Yale School of Medicine, each of which had interests in the research and service potentials of the Registry.

A planning committee was formed and it recommended that a Connecticut Cancer Epidemiology Unit be established under the policy guidance of a Connecticut Cancer Epidemiology Program Council. The most practical location for the Unit was in New Haven, in close professional association with the Department of Epidemiology and Public Health of the Yale School of Medicine. The Program Council included representatives from the State Medical Society, State Department of Health, University of Connecticut and Yale. Funding was to be provided through a contract between Yale and NCI. Yale would take responsibility for administrative management, general support, and fiscal services.

The first Chairman of the Program Council was the State Health Commissioner, Dr. Franklin Foote. Following his retirement, Dr. Barbara Christine, then Director of the CTR as well as Chief of the State Department of Health's Chronic Disease Control Section, became Chairman. Dr. Wayne Whitcomb of the CSMS was elected as Program Council Secretary in December 1973 and Dr. Colin White, from Yale's Department of Epidemiology and Public Health, as Vice-Chairman in October 1974. Dr. M.J. Casey, of the University of Connecticut Health Center, has recently agreed to serve as Chairman of CCEU's Research Advisory Committee.

Formal Establishment of the Unit CCEU began formal operation in January 1974 with the appointment of Dr. J. Wister Meigs as Director. The principal tasks of the Unit have been to define immediate, and longer term goals and to recruit core staff. The general long-term objective is to serve as the research arm of the Registry and to make epidemiological studies of cancer incidence and survival. These studies should be designed to identify causes or risk factors for cancer occurrence and to review survival in relation to many variables, for example, age, sex, diagnosis, stage of disease, and treatment. Results should be useful for planning better control methods.

Revisions of Data Management Systems Increasing concern for better control of cancer dictates additions to the kinds of research uses made of CTR. The Registry data management system was designed initially to provide information on incidence and mortality of cancer in the population and length of survival of patients after cancer was diagnosed. Revisions of this system have been made from time to time, but more extensive reorganization is planned to permit broadening of research that might use Registry files. These plans have been scheduled, with NCI support, to coincide with establishment of CCEU. This, in turn, has determined recruitment to its staff of a senior systems analyst, Dr. Norman Thetford, to work with staff of the Division of Health Statistics of the State Health Department, recently reorganized under the direction of Dr. Merton Honeyman. Implementation of data management changes within the CTR is being worked out by its Director, Mr. John Flannery, in consultation with Dr. Thetford. The Division of Health Statistics also includes all other data sets collected by the State Health Department. Projected changes in the CTR are being planned with needs in mind for linkage of CTR data with those available about deaths and births. Of particular interest is the registry of multiple births that constitutes a unique Connecticut resource in its potential for combination with a population based tumor registry.

These ongoing changes in the State Health Department's data management systems require close cooperation of both the systems analysis and research staff of CCEU so that the former can see examples of possible or desirable uses of the data system being designed. Conversely research staff can consult frequently to learn more about the capacities and limitations of the present system and can thereby be helped to design feasible studies for the present and intermediate future.

Current Research Activities During the 18 to 24 months of revision of the CTR data system, CCEU has undertaken a series of studies utilizing information previously stored on CTR computer tapes. A primary objective is to bring up to date for all the major types of tumor the patterns of incidence rates over time. We are giving special attention to male and female rates and ratios and changes in them in relation to town of residence, population density, urban-rural characteristics and indices of industrialization as well as socioeconomic status. This work should provide new clues about environmental influences on cancer incidence. Previous CTR publications have shown both increases in incidence rates for certain cancers since 1935 and higher rates among persons living in densely populated cities than in rural areas at the time of diagnosis.[2] [3] By analyzing results from other registries as well as from other cancer studies our work may point to kinds of agents or classes of chemicals as risk factors.

The cancer sites under study at present include: hematopoietic system (leukemia), brain, larynx, kidney, bladder and cervix uteri. Each was selected by a graduate student as a basis for a research project appropriate for a Master's degree thesis. Each investigation involves a data set of manageable size (between about 1000 and 12,000 cases). In addition, CCEU staff are developing a similar study of colon cancer.

Another project under way is a review of cancer experience among members of several occupational groups. A case-control study of leukemia in relation to both radiation and occupation in Hiroshima and Nagasaki showed among patients with leukemia a significant excess of persons in occupations where exposure to benzol and other solvents might have occurred.[4] Field studies to search for occupational and other environmental risk factors are planned as the second generation of relatively short exploratory projects.

Staff of the Unit Staff of CCEU currently include one part-time and 5 full-time professionals, dealing with epidemiology, demography, biometry, data management and programming. Seven graduate students are conducting special projects, and several pre- and post-doctoral students are developing protocols for work to be undertaken during 1975-76.

Relationships with Physicians, Hospitals and other Institutions An essential continuing activity of CCEU is development and maintenance of closer relationships with physicians and hospital tumor registry staff throughout Connecticut. To this end we are conducting visits that should eventually include each hospital. In Southern and Eastern parts of the State, the visits are planned jointly with the Yale Cancer Center. The CTR and CCEU depend on continuing interest and work of people in the health professions who report cases to the Registry. CCEU needs their ideas and suggestions if it is to help achieve better cancer prevention as well as treatment of patients. These tasks will be pursued in cooperation with physicians, hospitals, tumor clinics, the Connecticut Division—American Cancer Society, the University of Connecticut Medical Center, several branches of Yale University, and when appropriate, cancer patients and their families.

The Place of CCEU in National Cancer Activities CCEU is another link in a nationwide network of cancer registries called the SEER Group. The acronym SEER stands for Surveillance, Epidemiology and End Results Reporting. Developed by staff of the Biometry Branch, National Cancer Institute, a few years ago, SEER identifies a group of 9 population based cancer registries in the United States. These are supported in varying degrees by the National Cancer Program and operate with the following sponsorship and coverage:

California State Department of Health,
5 counties including San Francisco.

Connecticut State Department of Health,
the entire state.

Hawaii Medical Association, the entire state.

University of Iowa, the entire state.

Louisiana Health, Social and Rehabilitation
Service Administration, the New Orleans area,
(3 counties).

Michigan Cancer Foundation,
3 counties including Detroit.

University of New Mexico, the entire state.

University of Utah, the entire state.

Fred Hutchinson Cancer Research Center,
Seattle area, (3 counties) State of Washington.

These registries cover about 19,000,000 people at present. Plans are developing to add more by including Georgia, Puerto Rico and Los Angeles. Common obligations with respect to methods, rules of coding, and reporting practices are worked out jointly among the members of SEER and the NCI, Biometry Branch staff. Out of these agreements have come national cancer statistics with good reliability based on comparability of basic information. The SEER group provides United States data on incidence of cancer by age, sex, race, ethnic background, geographic location and other variables. End Results reporting permits assessment of overall effectiveness of cancer treatment as well as some estimate of the impact of cancer screening programs. The interrelationships of CCEU, CTR and SEER seem likely to develop further in useful directions.

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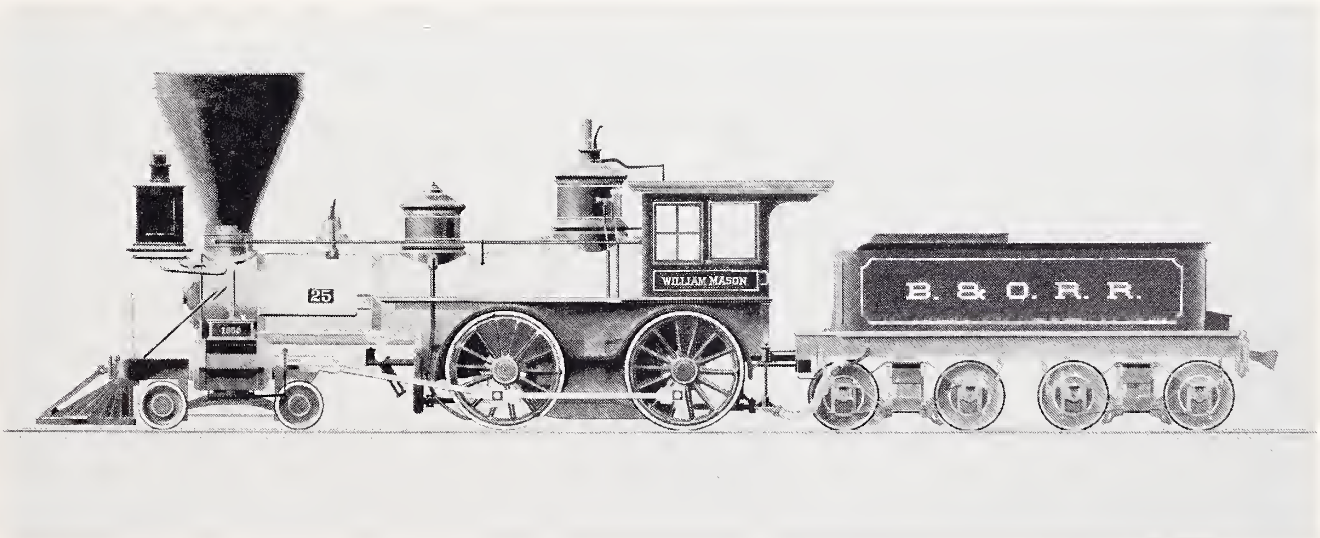

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Rights in Mental Health Care: The Situation of the Adolescent

Henry A. Beyer, J.D.

The legal definition of "adolescence" is "that age which follows puberty and precedes the age of majority." Therefore, in discussing the situation of the adolescent, the first point of legal significance is that an adolescent is a minor. And minors are persons who are not yet entitled to the full enjoyment of civic rights or, of greater pertinence to our subject, to the full management of their own affairs.

In the medical and mental health care fields, full management of one's own affairs would include the right to consent to or to refuse such care. The legal capacities to consent and to refuse are two rights which are denied to minors, including adolescents. In medical and mental health matters, the law has been, and in most states still is, that the parent or guardian speaks for the child.

Tonight I would like to focus on one mental health issue which I believe presents especially serious and difficult problems, namely, an adolescent's right (or lack thereof) to refuse admission to a mental health institution. We could, of course, discuss the question of an adolescent's right to control the nature of his treatment at any time. But I have chosen this particular part of the mental health system, the admission stage, because I believe it to be a critical threshold. It is critical first because of the very serious harm which may result from an inappropriate admission. Aside from possible injuries to the mind, reputation, and body, the loss of liberty incident to such an admission is massive—particularly for older adolescents accustomed to substantial freedom and mobility. Also, crossing the entrance threshold leads to a whole range of treatment situations. These subsequent situations, occurring as they do within the institution, and largely involving medical judgments, are less amenable to legal control than decisions made prior to, or at the point of, entrance. Finally, the adolescents' admission process deserves our attention because, running counter to the national trend of declining numbers of adult in-patients, the number of institutional children (and probably that of institutionalized adolescents) has grown during the past few years.

In most states, parents and guardians have the legal right to admit their adolescent children and wards to mental hospitals. If the institution agrees to accept the child, the admission is classified as "voluntary," regardless of whether the child himself agrees, remains silent, or objects and resists strenuously. Other than the decision made by his parents and the institution, the child is entitled to no review—neither judicial, administrative, nor any other—of the appropriateness of the admission.

Well, what is wrong with the present system? Can't parents be trusted to act in the best interest of their son or daughter? Unfortunately, the answer is, "not always." Most parents are undoubtedly well-intentioned, but many are misinformed or misguided. Their diagnosis of their child's problem (if any) may be colored by their own adverse reaction to an unfamiliar adolescent lifestyle or by embarrassment. Even if they correctly perceive that their child has a mental health problem, parents quite frequently are ignorant of the existence of possible, less drastic alternatives to hospitalization. Some alternatives, such as special schools or private psychiatric treatment, may be unavailable to poorer families. Finally, it is clear that some parents, in some admissions, have acted not in the best interest of the child, but in the interest of themselves or of other family members. The reason given for one child's admission to a state hospital for the retarded was that his "hyperactivity interfered with the routine of the household and disturbed family members." Another child was admitted because of "emotional instability of the mother." Instances of this latter problem are not so rare as one might think. A Philadelphia study (not limited to minors) has indicated that in twenty-five percent of complaints of alleged mental illness, it was the complainant, rather than the prospective patient, who evidenced signs of mental illness.

The problem is compounded by the fact that the law permits guardians, as well as parents, to "voluntarily" admit children. And a guardian need not be an

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HENRY A. BEYER, J.D., Staff Attorney, Center for Law and Health Sciences, Boston University School of Law. This paper is based on Professor Beyer's presentation at the University of Connecticut Health Center as part of the program "Focal Issues for the Public and the Professionals—Forum on Human Values and Health Care." Professor Beyer's research was supported by a grant (1-R01-MH24934-01) from the National Institute of Mental Health. The program on December 12, 1974, was "Rights in Mental Health Care—The Situation of the Adolescent." The Forums are supported by a grant (CHC-G-7404) awarded by the Connecticut Humanities Council under the auspices of the National Endowment for the Humanities to Stuart Spicker, Ph.D., Forum moderator and director of Humanistic Studies in Medicine in the School of Medicine. The December Forum was co-sponsored by the Capitol Region Council of Churches.

individual person but may be a state agency, such as a division of the welfare department. Such institutional guardians have, on more than one occasion, been known to admit inappropriately to mental institutions children for whom they were unable to find foster placements. This practice, which has come to be called "dumping," probably affects adolescents more than younger wards because of the scarcity of foster homes for older children. For the same reason, dumping is no doubt more prevalent for non-white adolescents.

Why, one might ask, don't mental hospitals deny admission to those adolescents inappropriately "volunteered" by parents or guardians? In most cases, they probably do. But, as is well known, most institutions are inadequately staffed. As a result, the admission examination frequently consists of a short, perfunctory interview with the child and parents. The interview is usually conducted by someone closer to the parents than to the adolescent in age and in outlook. In some cases, the interviewer is paid by the parents. In such circumstances it is hardly surprising that on occasion screening is less than adequate, the admitting agent defers to the parents, and an improper admission occurs.

Legal objections to the existing system of "voluntary" adolescent admissions can be framed in either "due process" or "equal protection" terms. I believe that one of the most straight-forward legal arguments is one of equal protection. Identical behavior patterns can, and do, result in some children being taken to juvenile court and others being taken to mental institutions. "Runaway," "incorrigible," "fire-setting," "theft," and "violence at home and school" are some of the reasons provided by hospitals for the admission of certain children. If these children had been taken to juvenile court they would have been afforded notice, a hearing before an impartial arbiter, assistance of counsel, and many other procedural protections. Instead, they were subject to an institutional admission process with no requirement for legal procedural safeguards. State support of systems providing such unequal protections to children similarly situated is, I believe, a clear violation to their constitutional right to equal protection of the law.

A few alternatives to the traditional adolescents' admission laws are beginning to emerge. One such development involves older adolescents. In a few states, including Connecticut, statutes have been passed giving persons sixteen years of age and older the right to voluntarily admit themselves to mental institutions. Last year a Connecticut court ruled that, if an adolescent has the capacity to admit himself at age sixteen, he also has the capacity to release himself at the same age, even though he was admitted by his parents when he was fifteen, and even though they object to his release.

A federal court in Tennessee also chose sixteen as the age at which some adolescents could speak for themselves. The court ruled that children of that age could not be admitted to a public institution for the retarded without their personal consent if they were capable of understanding the fact of the proposed admission. Is sixteen the proper age for such semi-autonomy? Little rationale is offered for the choice of that particular age. In the Tennessee opinion, for instance, a footnote stating that "compulsory school age in Tennessee is 16 . . . " is the only basis cited for selecting that age.

The law regarding "voluntary" admissions of younger adolescents and smaller children has also been changed in at least two states. In Illinois and Tennessee, although those under sixteen have not been given the right to speak for themselves, procedures have been instituted to review the parent-institution admission and retention decisions. In Illinois a court has ruled that any child hospitalized as a "voluntary" patient may personally request release. If the institution wishes to retain the child, it must ask a court to conduct an involuntary commitment proceeding.

In Tennessee, a new, court-created admission board must now pass on the appropriateness of the proposed admission of all children under sixteen to a public institution for the retarded. The board is composed of three persons not affiliated with the institution, but with interest, training, and experience in the field of mental retardation. One board member must be the parent of a retarded person.

The Illinois court also appointed the lawyers of a Chicago legal aid office to be advocates for all state wards in Illinois mental facilities. The child advocates' role is to investigate the circumstances of the admission, advise the child of his rights and options, and represent him at any hearings. They may challenge the diagnosis or treatment plan for their child client, question the parent or guardian's motives, and suggest less restrictive alternatives to hospitalization.

A great number of questions are inherent in these developing procedures. Is the Tennessee-type of admission board perhaps more competent to review admissions than a single judge, as under the Illinois procedure? Should the review take place before admission, as in Tennessee, or after entrance, as in Illinois? Are lawyers the best qualified persons for the multi-faceted advocate role? Should their advocacy be supplemented by professionals from the social sciences? Might the lawyer's efforts on behalf of the child disrupt any remaining family harmony? Should the advocate act "in the child's best interests," as the advocate perceives them, or should he support the child's professed desires? (My answer to the last question is that the advocate, after informing the child of his options and advising him of what the lawyer sees as his best course of action, should then advocate to the best of his ability the wishes of his minor client. In such situations, there are already enough professionals arguing for what each of them believes to be in the child's best interests.)

The hardest questions, perhaps, are concerned with what happens to children whose admission is found to be inappropriate. What problems result when they are returned to families who don't want them, who have just attempted to have them institutionalized? What socially supportive services exist (or can even be proposed) to assist the child and the family in such situations? Would more foster homes help? How can their numbers be increased? How can foster parents be found to provide homes for older, non-white adolescents?

It is clear that the traditional law regarding "voluntary" admissions of children should, and will change. I believe that adolescents at some age below the age of majority must be given the right to speak for themselves in the matter of their own admission. The appropriateness of the admission of younger adolescents and small children should definitely be reviewed by someone other than those persons initiating the admission or receiving them into the institution. Although many questions remain as to the specific procedures for best accomplishing these objectives, and though change thus far has been limited to a very few jurisdictions, I am encouraged that some courts, legislatures, and groups such as this are at last beginning to re-examine the rule of law which has given parents and guardians such unrestrained power in this important area.

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REPRESENTING THE PROFESSION . . . a fact sheet on the AMA in 1975

The AMA is primarily a scientific organization. More than 54% of the AMA's budget is spent to improve the delivery of medical and health care; 12% to improve the quality of American medicine; and 11% to improve the public's health knowledge and practices. But these are mere percentages.

In fact, every dollar the AMA spends is aimed at helping the physician practice first-rate medicine. During the past year some 1,000 bills relating to medical and health care were introduced in Congress. It is the objective of the AMA to see that this legislative action furthers, rather than restricts, the quality of medical care and the ability of physicians to do their best work.

Decisions made by the House of Delegates at the 1975 Annual Convention assure that these activities will continue. By voting to increase the dues—to $250 for regular members and to $35 for intern and resident members—the House provided the means for continued national representation of the profession. The response of the membership to the $60 special assessment voted at the 1974 Clinical Convention indicates clearly that physicians want a strong, active AMA and are ready to support it.

During the financial crisis of last year—a crisis that the AMA shared with other organizations, companies, governments and families across the country—the AMA became leaner and tougher. Internal changes in management procedures and budgetary methods have strengthened the Association and given it the ability, not only to fight inflationary pressures, but to anticipate medicine's problems and take fast action.

The AMA not only survived its fiscal crisis. While struggling to survive, it found the energy to take an even more aggressive position on behalf of physicians and their patients.

Here are some of the things that the AMA is doing in 1975:

AMA Wins Round Three in Legal Battle Over Utilization Review Regulations

On May 27, the AMA was granted a preliminary injunction against utilization review regulations requiring 24-hour concurrent review of all hospital admissions under Medicare and Medicaid. The federal government's motion to stay this decision was denied on May 28 by the District Court and on June 30 by the Circuit Court of Appeals.

Then, on July 22, the AMA won another significant legal victory on behalf of practicing physicians. A three-judge U.S. Circuit Court of Appeals Panel *denied a motion by the federal government to cancel a preliminary injunction against implementation of the regulations.* The Appeals Court said the AMA had "sufficient evidence to warrant a preliminary injunction" and stated: "These new regulations may have the effect of directly influencing a doctor's decision on what type of medical treatment will be provided, thus directly interfering with the practice of medicine."

AMA Sues HEW on Maximum Allowable Cost Regulations

On July 28, 1975, HEW formally announced that its MAC regulations would go into effect in nine months. The regulations set a maximum allowable cost for drugs administered to patients under federal health care programs.

Four hours after the HEW announcement, the AMA announced it would file suit asking for a declaratory judgment that the regulations are invalid and also for a permanent injunction. The AMA suit was filed in U.S. District Court in Chicago on July 29. The AMA maintains that the regulations would violate the constitutional rights of both patients and physicians and would create a labyrinth of drug regulations without assuring favorable cost benefits.

AMA Wins Fight to Prevent Federal Control of Residencies

The AMA won an important victory in the U.S. House of Representatives when *provisions for federal control of medical residencies were stricken from the Health Manpower Act of 1975.* The original bill called for federal restrictions on the allocation and distribution of residencies.

The AMA also strongly opposed another provision of the bill requiring medical students to pay back federal capitation grants given to medical schools—money medical schools receive for each student in the institution. Although the House supported the provision, it was diluted by amendments which exempt all current students and which eliminate payback requirements for graduates serving in the armed forces.

AMA Protests Changes in Original HMO Concept

AMA fired the first volley against legislative efforts to change the intent of the 1973 HMO law. In a strongly worded statement before the House of Representatives' Subcommittee on Health, AMA officials pointed out that proposed amendments to the HMO Act "would effectively gut the HMO concept" and would convert a demonstration health delivery program into a mechanism for the funding of ordinary prepaid groups." The AMA's position is that no one form of medical practice should receive favored treatment from the federal government over any other.

AMA Acts to Set Up Professional Liability Reinsurance Firm

The AMA is taking immediate and concrete action to ease the medical liability insurance crisis. At the 1975 Annual Convention, the House of Delegates authorized the establishment of an AMA reinsurance company as soon as possible. This kind of insurance has been unavailable in the open market. This new company would require the participation of five state society insurance companies with a minimum of $12 million in annual premiums and AMA capitalization of $1.5 million. When formed, it will provide a backup mechanism covering excess losses for those state medical societies that have established their own medical liability insurance firms.

Also, a special AMA staff task force is working actively with state medical associations, state legislators, insurance and legal representatives and others in developing solutions to liability problems at the state level.

AMA to Aid Members in Third Party Disputes

In response to the growing need for counsel to physicians in dealing with third parties, the AMA has established a new Department of Negotiations. This department will *train state, local, and specialty society executive staff and societies members in the art of skillful negotiations* and will also intervene directly on behalf of the profession in disputes of national significance.

National Health Insurance

The AMA believes that any program of national health insurance must leave the physician free to practice in accordance with his professional judgment and with the right to fee-for-service. Similarly, the patient must be free to choose the type of care and the physician he wants. This position is implicit in the AMA's NHI plan that has been introduced into the Congress as HR 6222. While actively advocating this plan, the AMA has consistently opposed other NHI proposals that call for the restructuring of our present health care system and increased federal involvement in the delivery of care.

Keogh Law Modification

The AMA was successful in convincing Congress to modify the self-employed tax retirement act, known as the Keogh law. The modification increases the annual limits of contributions a physician may make to a qualified retirement plan on behalf of himself, as a self-employed individual, to 15% of earned income or $7,500 a year. This single action has the potential to save a physician in the 40% tax bracket $1,500 a year, which is six times the $250 annual dues to the AMA.

This law also provides that members of professional corporations may set aside enough funds to provide a maximum retirement income of $75,000 a year.

In a message to the AMA House of Delegates, former Congressman Eugene Keogh gave credit to the AMA for developing the concept of the legislation and working for its passage. He said the lesson to be learned from the experience with this law is that "an AMA united with singleness of purpose is an unstoppable force."

AMA Membership Sets Record

For the third consecutive year, the AMA has broken a record in dues-paying membership. As of August 8, 1975, the AMA had over 5,000 more dues-paying members than at the same time last year, which was an all-time record year. Membership among medical students and housestaff has shown a 100% increase. In late August, AMA membership had exceeded its 1974 total.

Combined Membership Strengthens Federation

Combined county, state, and AMA membership strengthens each level of the Federation and this concept deserves consideration in every area. Studies have shown that in states having unified AMA membership, the policy has no negative effect on state and county membership. These states rank among the highest in the nation of Federation members to physician population.

The American Dental Association has unified membership *in every state.*

Back in 1970 Max H. Parrott, M.D., who is now President of the AMA, summarized the Association's major services to members in this way:

"It gives the physician a strong voice on important issues.

"It gives the physician the power to endure against those who would tamper with and debilitate the nature of his art.

"It provides the physician with an ethical structure which would otherwise be imposed from outside medicine.

"It maintains the quality of medical care with medical education and accreditation programs, with scientific forums and publications, and with constant surveillance and evaluation of medical practice.

"It carries in unity the strength for defense; and it carries in knowledge and acquaintanceship the strength for aggressive, positive action."

The AMA is doing this, even more vigorously, today.

Characteristics of the Good Physician

Rafael C. Sanchez, M.D.

The need to identify those qualities which characterize the good physician has long been felt by many. Teacher, medical student, patient, allied health personnel, and doctor are the principals in this exercise of selecting those attributes which represent the good physician.

I would hazard a guess that the patient and the doctor are the more concerned of the group. The patient with a problem wants the "best" for self and is usually totally dependent for medical services. When the problem affects health and sooner or later life, the patient naturally wants a reasonable guarantee that his doctor will be up to the task of precise diagnosis and effective management.

The doctor on the other hand has a dual concern—for himself and for the patient. In patient care he needs to set standards of performance and goals which he must meet in order to succeed. And sometimes when the physician is the patient we know how "only the best" will do.

The basic attributes of the Good Physician have previously been documented.[1] As would be expected they make up a composite picture which includes: skill, judgement, competence, effectiveness, and responsibility.

Using the critical incident technique,[2] Price was able to compile a large list of qualities which identify "goodness" and "badness" in the physician.[3]

Goodness has qualities of an intellectual dimension which include knowledge and training. Behavioral qualities involve social factors, personality, character, and motivation. Performance is measured by achievement, evidence of skill, and demonstrated responsibility. Badness is characterized by undesirable traits of character, such as, irresponsibility, untrustworthiness deceit, dishonesty, and being unethical.

How to influence these factors for the medical student is a serious concern. It can be said that there has been a "lack of sensitivity of faculty to anticipate future needs of their students or to attempt to identify excellence in a practitioner."[3] Likewise, practicing physicians have frequently been critical of the curriculum, complaining that it does not prepare them for the "real" world of medical practice.

Only recently has the consumer (patient) become involved in articulating health care expectations, and the profession and the medical school became concerned about the provider of health care services. All this in terms of the outcry for more primary care physicians—people doctors who will meet the health care needs of the patient and his family.

Our effort was designed to elicit information regarding the characteristics of both outstanding physicians and physicians whose image displayed certain weaknesses. Using a modified critical incident technique.[2] requests for information were distributed to a randomly-selected sample of 670 Louisiana physicians. Responses containing usable data were received from 251 physicians.

When asked to think of a physician whom they considered to be outstanding (Table 1), more than half of the responding physicians chose a person with whom they had been associated in a peer or personal physician relationship. Slightly more than one quarter chose a former teacher, and about one in eight selected an individual whom they had known as both a teacher and a colleague.

Table 1

QUALITIES OF OUTSTANDING PHYSICIANS WHICH ARE DIRECTLY RELATED TO THE PRACTICE OF MEDICINE

(Qualities are ranked from most frequently cited to least frequently cited.)

1. Is highly skilled in his field; has good overall knowledge of medicine.
2. Shows empathy, devotion and interest for patient.
3. Keeps up to date.
4. Is interested in teaching and sharing his knowledge with others.
5. Performs thorough diagnosis.
6. Has a good relationship with colleagues; uses consultants wisely.
7. Is active in professional associations.
8. Has a conservative approach to medicine; prescribes no unnecessary procedures.
9. Is devoted to his practice; responds promptly when called.
10. Has good rapport with patients.
11. Assesses moderate charges; never inflicts financial burden on patients.
12. Takes good, thorough history and physical.
13. Has clinical acumen; differentiates between important and insignificant.
14. Can cope with emergency.
15. Is interested in research.
16. Demonstrates high professional standards.
17. Practices preventive medicine.
18. Is able to make decisions under stress.
19. Has an excellent reputation.
20. Makes house calls.

The professional qualities (Table 2) which physicians most frequently chose as being characteristic of an outstanding physician were extensive knowledge of medicine and special skill in this field, devotion to patients and the ability to interact effectively with them, willingness to keep up to date, interest in teaching, and skill as a diagnostician.

DR. RAFAEL C. SANCHEZ, Professor of Family Medicine, Louisiana State University School of Medicine, New Orleans.

Table 2

PERSONAL QUALITIES OF OUTSTANDING PHYSICIANS

(Qualities are ranked from most frequently cited to least frequently cited.)

1. Has high standards of honesty, integrity and ethics.
2. Is compassionate and sympathetic.
3. Is contentious and willing to work; dedicated to his profession.
4. Understands people; is tactful, considerate, patient and courteous in dealing with others.
5. Is intelligent and well-informed.
6. Is humble; knows his limitations, respects the opinions of others, is adaptable to changing circumstances.
7. Is self-sacrificing and altruistic; gives freely of himself.
8. Displays maturity and self-discipline; is reliable and punctual.
9. Is careful and thorough in all his activities.
10. Is personable; has a good sense of humor.
11. Displays sincerity in dealings with others.
12. Demonstrates good character and adherence to high ideals.
13. Communicates well with others; speaks in a logical and down-to-earth manner.
14. Is a good listener.
15. Is active in community affairs.
16. Is reasonable and displays common sense.
17. Displays self-confidence and objectivity.
18. Shows a high regard for all forms of life.
19. Has a good, neat personal appearance.
20. Sets a good example for others.
21. Is religious.

Personal qualities most frequently cited included honesty, integrity, self-confidence, industriousness, an interest in people (including the ability to deal sympathetically, tactfully, and respectfully with them), and broad general knowledge.

Turning to the physician whose image displayed weakness (Table 3), both physicians and students cited lack of medical knowledge, lack of respect for patients, inability to communicate with patients, overemphasis on money, lack of enthusiasm, and failure to recognize shortcomings or admit mistakes as most common examples of professional failings. In the area of personal faults (Table 4), immaturity and lack of self-confidence, as characterized by inability to accept responsibility and failure to admit mistakes, was among the most frequently cited failings. Lack of consideration for others, generally bad manners, selfishness, and lack of common sense were also frequently mentioned as characterizing the weak physician. Rudeness and hostility to students, lack of enthusiasm for teaching, and inattention to student questions were the most common complaints regarding teaching ability.

One recurrent theme throughout this investigation was that outstanding physicians demonstrate an understanding of the importance of getting along with people. They treat others—patients, students, colleagues, or other associates—with interest, respect, and dignity. By the same token, weak physicians were often described as lacking this ability. It would, therefore, behoove the medical school to place great emphasis upon the physician's need to understand human nature and to develop skills in interpersonal communication. Further, the opportunity to practice and improve these skills must be available throughout the undergraduate years.

Table 3

PROFESSIONALLY-RELATED CHARACTERISTICS OF WEAK PHYSICIANS

(Qualities are ranked from most frequently cited to least frequently cited.)

1. Shows lack of medical knowledge.
2. Is mainly interested in money; charges high fees.
3. Has poor relationship with patients; does not consider patients as individuals; indifferent to patients; unable to communicate with patients or with patient's family.
4. Is selfish, lack of concern for patients.
5. Doesn't recognize shortcomings; does procedures for which he isn't qualified.
6. Careless; keeps poor records, does incomplete procedures, takes incomplete histories.
7. Is poor diagnostician.
8. Is dishonest; unethical; lies to patients and colleagues.
9. Does not keep up.
10. Does unnecessary procedures; takes drastic measures when less drastic would do.
11. Has poor relationship with other M.D.'s and with hospital staff.
12. Exercises poor judgment; lets emotions interfere; doesn't use common sense.
13. Is not available when needed.
14. Shows inept use of drugs and prescriptions.
15. Cannot or will not handle emergency room work.
16. Is lazy, not willing to work.
17. Uses hospitalization to excess.
18. Is interested only in his specialty.
19. Engages in criminal activities regarding drugs.
20. Refuses to treat indigent patients.
21. Practice is too large; patients are not adequately cared for.
22. Has excessive personal involvement with patients.
23. Shows no concern for organized medicine.

Table 4

PERSONAL CHARACTERISTICS OF WEAK PHYSICIAN

(Qualities are ranked from most frequently cited to least frequently cited.)

1. Immature; cannot make decisions or accept responsibility; lacks self confidence; won't admit mistakes.
2. Is rude, arrogant, tactless.
3. Lacks compassion and consideration for others.
4. Is impatient; has quick temper; uses abusive language.
5. Has psychological problems.
6. Is not punctual.
7. Shows overt racial prejudice.
8. Allows himself to be imposed upon.

Another area in which the medical school should strive to develop proper attitudes among students involves the recognition of one's limitations and willingness to admit mistakes. Medicine is a dynamic, changing profession in which the most erudite physician will find that much of the knowledge with which he left medical school has fallen into disuse and become obsolete. He must therefore, admit that some situations with which he comes in contact fall outside his area of competence and be willing to call upon the services of consultants or refer patients to specialists when appropriate. The medical school can play an important role in inculcating the realization that admission of one's limitations is not a sign of professional incompetence but rather a sign of professional maturity. A corollary of this realization is the acceptance of graduation from medical school as marking the beginning of one's lifelong commitment to continuing education.

Finally, medical schools must emphasize that the M.D. degree is merely certification of the recipient's ability to perform at a level acceptable to those in the profession. It does not *per se* confer special privileges upon him, nor does it absolve him from the necessity of observing standard forms of courtesy and good manners applicable to society at large. Indeed, it imposes the dual obligation to conduct himself within both socially accepted confines and the code of ethics of his profession. For an institution to neglect this phase of a student's training would indeed be a serious failing.

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This study was supported by a grant from the National Fund for Medical Education.

The University of Connecticut Health Center Drug Information Service

Gentamicin Ototoxicity

A request for information on gemtamicin ototoxicity was received in the DIC in response to suspected gentamicin-induced vestibular damage in a 40 year-old female diabetic patient. A review of the literature revealed the following:

(1) Ototoxicity secondary to gentamicin can involve the vestibular branch, cochlear branch, or both branches of the 8th nerve. Vestibular ototoxicity is more common, with or without hearing loss. Hearing loss *alone,* without vestibular damage, is less common. Cochlear damage is more common with neomycin and kanamycin, while streptomycin is more like gentamicin in causing predominately vestibular damage.

(2) The vestibular damage can be reversible. In one study[1] 50% of the cases reacquired vestibular function (time duration unspecified) while in another[2] 1/6 recovered within 6 months and 4/5 recovered within 1 year. Some cases, however, are irreversible.

(3) Patients with irreversible vestibular damage can compensate through visual and propioceptor function. These patients do better with their eyes open and in light. They do poorly with eyes closed or in a dark environment. This phenomena helps to differentiate drug-induced vestibular damage from cerebellar dysfunction.[3]

(4) Vestibular effects are usually bilateral, but unilateral effects can occur less commonly.

(5) Vestibular toxicity has occurred at gentamicin blood levels of less than 10 ug/ml to be "safe."

(6) *Significant* risk factors predisposing a patient to gentamicin ototoxicity are:

1. impaired renal function.
2. duration of therapy.
3. "zero-time" or "valley" blood level (the determined level prior to administering next dose)
4. history of previous course of ototoxic drug therapy.

(7) *Non-significant* factors include:

1. age
2. total dose of G
3. total daily dose of G
4. highest serum concentration achieved ("peak" value).

(8) Tinnitus is not a reliable indicator of ototoxicity. It may or may not be present with vestibular or cochlear damage.

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The safety of ethaverine hydrochloride during pregnancy or lactation has not been established; therefore it should not be used in pregnant women or in women of childbearing age unless, in the judgment of the physician, its use is deemed essential to the welfare of the patient.

Adverse Reactions: Although occurring rarely, the reported side effects of ethaverine include nausea, abdominal distress, hypotension, anorexia, constipation or diarrhea, skin rash, malaise, drowsiness, vertigo, sweating, and headache.

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The Medical Examiner and Aircraft Accident Investigation

The June, 1971 Crash At East Haven

Elliot M. Gross, M.D.

Abstract—Fatality identification, accident causation, and increased aviation safety are the major concerns of a medical examiner participating in an air transport disaster.

In June of 1971, Connecticut experienced its first fatal commercial aircraft accident resulting in the deaths of 27 passengers and one crew member. The findings of the autopsy performed on the body of the stewardess resulted in specific recommendations of the National Transportation Safety Board to enhance aircrash survivability.

On June 7, 1971, a prop jet en route from Groton, Connecticut to Newport News, Virginia, crashed on approach to the Tweed-New Haven airport resulting in Connecticut's first fatal U.S. civil air carrier accident. Twenty-six passengers, the captain and the one flight attendent died.

The pathologic findings of the autopsies contributed to recommendations made to the Federal Aviation Administration by the National Transportation Safety Board following its investigation.[1] Although the pathologist's role in aircraft accident inquiries has been previously discussed[2] the changes advocated as a result of the investigation into the Connecticut accident are of sufficient public interest to prompt this review.

Responsibility For Investigation

Responsibility for conducting a civil air carrier crash investigation (previously delegated to the Civil Aeronautics Board) was assigned by the Department of Transportation Act of 1966 to the National Transportation Safety Board. The government's role in the investigation of such accidents arose from federal responsibility for regulating aircraft operations and for licensing of crews, as specified in the Federal Aviation Act of 1958. A 1962 amendment authorized examination of deceased individuals (flight crew and passengers) providing, however, that any local law protecting religious beliefs with respect to autopsies be observed.[3]

Although the Armed Forces Institute of Pathology in Washington, D.C., in the past, provided on-site assistance to the National Transportation Safety Board in selected instances, responsibility for conducting examinations always rested with the local medicolegal authorities. These are carried out (1) to identify fatalities; (2) to determine the cause of the crash; and (3) to evaluate survivability of the accident.

Identification may be impeded by the severity of impact forces, fragmentation of the airliner, and the occurrence of a pre- or post-crash fire.[4] Radiologists, dentists and physical anthropologists may be required to supplement police fingerprint experts and the number of fatalities may necessitate the establishment of a temporary refrigerated facility for preservation. Identification is essential in order to issue death certificates and to insure release of the victims to the next of kin.

The pathologist can assist in establishing the probable cause of the accident, which may be ultimately attributed to actions of the flight crew; to structural defects in the aircraft; or to damage caused by external agents.

The Pathologist and The Cause of an Accident

In the death of a pilot or other flight crew member, the autopsy may disclose the presence of disease or of alcohol and drugs. It has been estimated that six inflight cardio-vascular incapacitations of pilots flying light planes (general aviation)[5] occur annually and deaths of airline pilots due to coronary artery disease have occurred in-flight as well as just before or after flight. Although the cause-effect relationship of atherosclerosis of the coronary arteries to any accident is difficult to evaluate in the presence of traumatic injuries, in one airplane crash, incapacitation due to coronary insufficiency was officially determined to be the probable cause of the fatal accident:[6]

> An autopsy upon the body of a 59-year old pilot of an airplane carrying 93 passengers and 4 other crew members disclosed severe coronary arteriosclerosis in addition to multiple fractures and internal injuries, either of which in and of themselves could have been the cause of his death in the crash near Ardmore, Oklahoma in 1966. Present on or near his person was a bottle of tablets containing nitroglycerin and a test tape for urinary reducing sugars. The captain's personal medical records indicated anginal symptoms and palpitations for 16 years prior to death (for which he had received nitroglycerin)

DR. ELLIOT M. GROSS, Chief Medical Examiner, State of Connecticut; Assistant Professor of Pathology, University of Connecticut Health Center.

and diabetes mellitus (for which oral hypoglycemic agents had been prescribed). This contrasted with denial, on Federal Aviation Agency applications, of 1.) heart disease, 2.) diabetes mellitus, 3.) consultation with a physician or 4.) treatment for these entities.

> The hand injuries sustained by the first officer and their relationship to the cockpit controls coupled with the manner in which the crash occurred in the absence of structural and power plant failure suggested a possible attempt by him to take over the airplane and prompted the official decision attributing the probable cause of the accident to the pilot's disease.

In this accident, embalming prior to the autopsy did not interfere with the ethyl alcohol determination, because the preservative contained methyl, but no ethyl alcohol. It did, however, preclude accurate determination of drugs, which in a study of 202 pilot fatalities were detected in 3.5% of the cases.

Relationship of pathologic findings to the cause of passenger jet accidents was described in 1955 following the disappearance of two airliners in the Mediterranean Sea.[8] Although the bodies, upon being recovered from the water, exhibited closed fractures and internal injuries, their relative intactness (in contrast to the fragmentation which may occur on impact of an aircraft) was consistent with unimpeded falls from altitude, the result of in-flight structural failure and explosive decompression. In in-flight dynamitings similar passenger injury patterns may be seen with more specific lesions focusing attention on an individual victim:[9]

> In 1960, a propeller-driven airliner flying at 18,000 feet, crashed in a field near Bolivia, North Carolina. 28 passengers and the crew of 5 died in the crash. The 34th victim was a male passenger whose body was found sixteen miles from the site of the wreckage and whose suspicious injuries caused the Federal Aviation Administration to request a re-examination following the initial autopsy.
>
> Fragmentation injuries of both upper and lower extremities with absence of the left fibula were noted. X-rays revealed multiple foreign particles within the tissues, and wires, .025 inch in diameter, and a brass fragment were recovered from the right wrist and left forearm respectively. The right hand contained manganese dioxide, attributed to a dry cell battery.
>
> Reconstruction of the fuselage indicated an in flight disintegration in a section in which manganese dioxide deposits and fragments of .025 inch wire were found amid carpeting and other interior furnishings. Residues typical of the detonation of dynamite were found in the air vent of the passenger cabin and left fibula and a brass fragment were found in a hat rack.
>
> The examination of the passenger and the structural defect pointed to a dynamite charge initiated by a dry cell battery as the probable cause of the accident.

Similar observations were made in a crash in 1969 where particles observed on the body and on a cushion corroborated the basic cause of the accident as the detonation of a plastic bomb within the passenger compartment.[10] Despite the great heights (30,000 feet) from which falls may occur under such circumstances, instantaneously fatal injuries do not always result.[11]

Although wounds from dynamite tend to be characteristic, high impact crashes coupled with post-crash fires or the effects of heat and flame alone on the body, may result in post-mortem thermal artifacts misinterpreted as injuries due to an explosion. When a passenger in a Chicago crash was identified as the wife of a defendant in a federal criminal trial attracting national interest, suspicion of sabotage arose because autopsy protocols revealed "blast injuries and severe destruction by blast and flames,"[12] despite the probable cause of the accident being attributed to the actions of the captain.

The Pathologist And Accident Survivability

Whether death was due to trauma at impact or fire is important in order to determine survivability and to assess the need for aircraft modification to improve crash worthiness:[13]

> In 1965, a jet airliner crashed 355 feet short of the Salt Lake City Airport runway. A fire followed the rupture of fuel lines as the aircraft slid approximately 3,000 feet to a halt. 50 of the passengers escaped through emergency exits (including 3 after hiding within the partially lowered rear stairwell until one protruding arm attracted firemen). 41 fatalities were found within the fuselage following the extinction of flames and the cause of every death was attributed to inhalation of smoke and carbon monoxide.

The findings, in the absence of traumatic injuries to survivors or to fatalities, in part, permitted the Civil Aeronautics Board at that time to classify the accident as survivable and to make to the Federal Aviation Agency recommendations concerning crash prevention research and alterations in interior furnishings.

The East Haven Crash

In East Haven, the aircraft, after striking three beach cottages a mile from the runway, came to rest 270 feet from the initial impact. The cockpit area opened and a fire, ignited from spilled fuel, accelerated to destroy the cabin interior. Survivors included the first officer, found lying in front of the cockpit area with traumatic injuries, and two passengers, who escaped through a smoke-filled forward exit window.

The pilot was identified through fingerprints, while 22 victims, including the stewardess were identified through comparison of dentition with ante-mortem dental records. The identity of the remaining passengers was established through physical characteristics.

The pilot sustained skull, rib and clavicular fractures as well as burns and absence of soot in the respiratory tree and carboxy-hemoglobin in the blood indicated death at impact. The stewardess sustained thermal burns and exhibited smoke inhalation and a carboxy-hemoglobin saturation of 70% indicating that she died as a result of the post-crash fire although fractures of the left clavicle and third thoracic vertebra were attributed to impact injury. Biological specimens from the pilot and stewardess contained neither ethyl alcohol nor drugs. The deaths of the 26 passengers, none of whom exhibited traumatic injuries, were due to fire.

The probable cause of the accident was ultimately attributed to "the captain's intentional descent below the prescribed minimum altitude under adverse weather conditions," and the National Transportation Safety Board noted that he had disregarded "prescribed operating procedures."[1]

The pathological examinations in the East Haven crash were important insofar as the cause of the accident and aviation safety were concerned. At the time of the autopsy on the body of the pilot, questions arose concerning his execution of three missed approaches at the Groton Airport prior to the scheduled Tweed-New Haven landing. These were subsequently deemed deliberate[1] and the motivation for such decisions was of paramount concern to the investigators. The determination of the content of drugs and alcohol were, therefore, in retrospect, of more than routine interest in assessing the behavior and judgment of the pilot.

The stewardess was the only flight attendant on board because the aircraft was flying with the exemption of a regulation which required that the particular plane have two flight attendants. The injuries to the stewardess became significant when it was realized that her body was found along with fifteen passenger fatalities near the rear exit door which had not been opened due, in all probability, to her incapacitation at impact. The fact that all of the passengers died as a result of the fire indicated that the accident, had they been able to exit from the plane, was survivable.

Subsequently, the National Transportation Safety Board made thirteen recommendations to the Federal Aviation Administration, eight of which pertained to emergency egress and evolved from the observations pertaining to the stewardess' injuries in relation to her location in the fuselage. These included the recommendations that there be adequate shoulder harnesses for flight attendants; that the instructions for opening the rear service door in the particular aircraft be adequately located and be sufficiently clear to permit a passenger to open the door in the event the lower half was obstructed and that its handle be modified to simplify its operation.

Aircraft Fatalities and Aviation Safety
The June, 1971 Accident at East Haven, Connecticut

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Overdosage: Keep the medication out of the reach of children since accidental overdosage may cause severe, even fatal, respiratory depression. Signs of overdosage include flushing, hyperthermia, tachycardia, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils and respiratory depression which may occur 12 to 30 hours after overdose. Evacuate stomach by lavage, establish a patent airway and, when necessary, assist respiration mechanically. A narcotic antagonist may be used in severe respiratory depression. Observation should extend over at least 48 hours.

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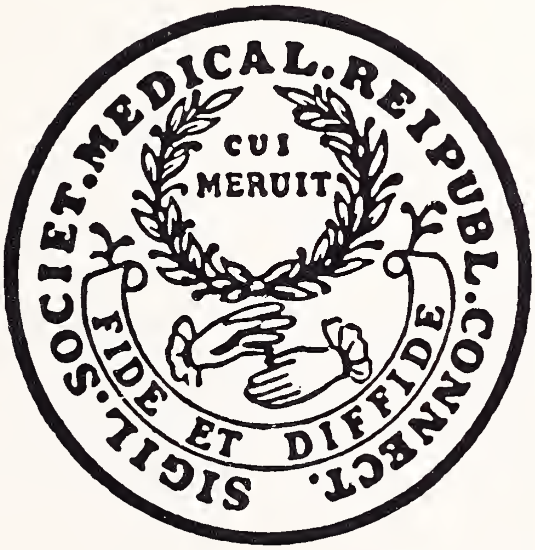

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INDEX
CHARTER AND BYLAWS
CONNECTICUT STATE MEDICAL SOCIETY

	Art.	Sec.	Par.
Bonding, Fidelity	XIII	4	
Budget	XIII	3	
Bylaws Amendments	XV	1-2	
Enablement Clause	XVI	2	
Committees:			
Standing Committees, Representatives and Advisors of The House of Delegates	XI	1	1-6
	XI	2	1-5
Council Committees	X	1	
Council Subcommittees	X	2	
Vacancies	VII	6	
Component Associations	III	1	
Bylaws	XIV	10	
Definition	XIV	1	
Dues	XIV	9	
Function	XIV	2	1-2
Membership			
Discipline	XIV	7	1-3
Eligibility	XIV	3	
Roster	XIV	6	
Termination	XIV	8	
Transfer, County	XIV	4	
Transfer, State	XIV	5	
Connecticut Medicine	IX		
Finances	IX	3	
Council	VII		
Chairman and Vice-Chairman	VII	1	2
Composition	VII	2	
Meetings	VII	5	1
Powers & Duties	VII	1	
Policy Initiation	VII	7	
Quorum	VII	5	2
Reports	VII	1	7
Committees	X	1	
Subcommittees	X	2	
Vacancies	VII	4	5
	VII	6	
Councilors and Associate Councilors			
Limitation of Tenure	VII	4	4
Vacancies	VII	4	5
Years of Election & Terms	VII	4	2
Councilor-at-Large	VII	4	3
Counsel	VII	1	10
Delegates			
American Medical Association	VI	4	1
House of Delegates—CSMS	V	4	
	Charter	5	
Dues			
Prescription	XII	1	
Benefits	XII	2	
Collection	XIV	9	
Delinquency	XII	4	
Exemption	XII	3	
Editor			
Election	IX	1	
Powers and Duties	IX	2	
Employees	VII	1	9
Ethics	II	3	
Executive Director	VII	3	
Appointment	VII	3	1
Duties	VII	3	2
Finances	VII	1	3
Fiscal Year	XIII	1	
Funds, Deposit	XIII	2	
Honorary Degrees	VII	1	5
House of Delegates	V		
Apportionment	V	4	
	Charter	5	
Charter Provisions	Charter	2	
Composition	Charter	3	
	V	2	
Eligibility	V	3	
Meetings			
Charter Provisions	Charter	4	
Executive	V	10	
Open and Closed	V	9	
Regular	V	7	
Special	V	8	
Order of Business	V	12	1
Powers and Duties	V	1	
	Charter	2	
Procedure	V	12	
Privilege of Floor	V	12	2
Quorum	V	11	
Reference Committees	V	12	4
Referendum	V	13	
Registration	V	5	2
Certification	V	5	1
Vacancies	V	5	3
Status after Seating	V	6	
Resolutions	V	12	3
Meetings			
Annual	VIII	2	1
Registrants	VIII	3	1
Quorum	VIII	4	
Sections	VIII	2	2
	VIII	3	2
Scientific Assembly	VIII	1	
Membership	Charter	7	
Active	IV	1	1
Associate	IV	2	
Honorary	IV	3	
	VII	1	4
Life	IV	4	1-2
Limitation	IV	6	
Student	IV	5	
	VII	1	8
Suspension or Expulsion	IV	1	2
Nominating Committee	VII	1	6
Officers	VI	1	
Duties	VI	8-15	
Qualifications	VI	2	
Terms-Nomination of	VI	3-4	
Vacancies	VI	4	2
	VI	5-7	
Policy Initiation or Commitment	VII	7	
Purposes of Society	II	1-2	
Quorum			
Council	VII	5	2
House of Delegates	V	11	
Reference Committees	V	12	4
Referendum	V	13	
Representatives & Advisors	XI	1	1-6
Election	XI	1	4
Resolutions	V	12	3
Rules of Order	XVI	1	
Sections	VIII	2	2

CHARTER

(Reprinted October 1975)

The Connecticut State Medical Society was incorporated and chartered by the Connecticut General Assembly in 1792. This is believed to be the earliest private charter granted by the State of Connecticut. The Society has no constitution, the articles of incorporation serve that purpose and cannot be amended without legislative action. The Bylaws implement the Charter and it is under them that affairs of the Society are carried on. The Bylaws can be amended at any meeting of the House of Delegates after proper notice and they are often revised to keep pace with the progress and changing responsibilities of the Society. The Bylaws now published include all amendments to date. The first meeting of the Society was held in Middletown on October 9, 1792.

CHARTER

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. The charter of The Connecticut Medical Society, approved June 5, 1834, is amended to read as follows: All persons who are, at the time of the passage of this act, members of The Connecticut Medical Society and all physicians and surgeons who shall hereafter be associated with them in pursuance of the provisions of this act shall be and remain a body politic and corporate by the name of The Connecticut State Medical Society; and by that name they and their successors shall and may have perpetual succession; shall be capable of suing and being sued, pleading and being impleaded, in all suits of whatever name and nature; may have a common seal and may alter the same at pleasure and may also purchase, receive, hold and convey any estate, real and personal.

Section 2. The superintendence and management of the corporation shall be vested in a board to be known as "The House of Delegates of The Connecticut State Medical Society," which board shall have power to establish officers in said corporation and prescribe the duties of the several officers and of the members of said corporation and may fix their compensation; to establish the conditions of admission to and dismission and expulsion from said Society; to lay a tax, from time to time, upon the members and to collect the same; to hold and dispose of all monies and other property belonging to the corporation in such manner as it may deem advisable to promote the objects and interests of The Society and in general to make such bylaws and regulations for the due government of the Society, not repugnant to the statutes of the United States or of this state, as may be deemed necessary.

Section 3. The House of Delegates of the Connecticut State Medical Society shall be composed of, (1) the President, the President-Elect, Treasurer and Secretary of the Society, (2) delegates to be elected annually as hereinafter provided, by the several county medical associations in this State which heretofore have been and are affiliated with the Connecticut State Medical Society and (3) the members of the Council of the Society.

Section 4. An annual meeting of the corporation, for the election of officers and such other business as may, from time to time, arise, shall be held upon such day in each year as The House of Delegates shall, from time to time, prescribe. Notice of such annual meeting date shall be sent to every affiliated county medical association at least sixty days before each annual meeting date so prescribed.

Section 5. At a meeting to be held at least twenty days in advance of the annual meeting of the corporation in each year, every affiliated county association shall elect a delegate or delegates to represent it in The House of Delegates of this Society in the proportion of one delegate to each thirty-five members, or any part of that number, and the secretary of such affiliated county association shall send a list of such delegates to the Secretary of this corporation at least twenty days before the date of such annual meeting.

Section 6. There shall be in The House of Delegates, one Councilor from each affiliated county medical association. The Councilors holding office at the time of the passage of this act shall serve out the terms of office for which they were elected. At their annual meeting to be held in 1931, the affiliated county medical associations for the counties of Hartford, New London, Windham, and Middlesex shall each elect one Councilor who shall serve for two years, and at their annual meeting in 1932 the affiliated county medical associations for New Haven, Fairfield, Litchfield, and Tolland counties shall each elect one Councilor, who shall serve for two years. Thereafter each county, in groups as above mentioned, shall, biennially, elect a Councilor to fill said office for a term of two years. Any vacancy in said office may be filled by the county association of the county in which the vacancy occurs, by election to fill the unexpired portion of the term.

Section 7. The secretary of each affiliated county medical association in this state, shall, within ten days following any meeting of such association at which new members are elected, file with the Secretary of the Society a list of all members of such association who are at the time in good and regular standing and thereupon all such persons shall become members of The Connecticut State Medical Society without further action.

BYLAWS

ARTICLE I—TITLE AND DEFINITION

The name of this corporation is The Connecticut State Medical Society, Incorporated, hereinafter referred to as "The Society." It is a federacy of its component associations.

ARTICLE II—PURPOSES

Section 1. Purposes

The purposes of The Society shall be to federate and bring into one organization the medical profession of the State of Connecticut; to unite with similar societies in other states to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standards of medical education; to promote friendly intercourse among physicians; and to enlighten and direct public opinion so that the profession shall become increasingly useful to the public in the prevention and care of disease and in prolonging and adding comfort to life.

Section 2. Non-profit Organization

The Society is not organized, and shall never be maintained and conducted for the pecuniary profit of its members, officers, or employees but shall be, and remain, a strictly scientific and educational corporation, and no member, officer or employee of The Society shall at any time receive or be entitled to receive any pecuniary profit from the operation of The Society except a reasonable compensation for services actually rendered.

Section 3. Ethics

The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

ARTICLE III—COMPONENT ASSOCIATIONS

Section 1. Component Associations

The county medical associations in the following counties shall be the component associations of The Society: Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland, Windham.

ARTICLE IV—MEMBERSHIP

Section 1. Active Members

Par. 1—Active Membership shall be limited to those members of component associations who are certified to the Executive Director of The Society as entitled to exercise all rights of membership in their component associations including the rights to vote and hold office. A physician eligible for Active Membership in The Society becomes an Active Member of The Society on receipt by the Executive Director of The Society of dues prescribed by The Society unless he is exempted from payment of dues as provided in Article XII.

Par. 2—Active Members ceasing to be in good standing or ceasing to be members of their component associations shall ipso facto have the same status in The Society. Any Active Member expelled from his component association or placed under suspension by his component association shall ipso facto have the same status in The Society, but his right to appeal his expulsion or suspension to The Society shall not be impaired thereby. For purposes of definitions: (a) An Active Member who is expelled from membership in The Society shall have his name removed from the roster of members of The Society by the Secretary, and will not again be eligible for Active Membership in The Society until he is certified to the Executive Director as being a member in good standing of a component association. (b) An Active Member under suspension from The Society shall remain a member of The Society and shall be required to pay membership dues to The Society, but shall be denied the rights to vote and hold office during the period of his suspension.

Section 2. Associate Members

Physicians and others interested in the science of medicine and public health who are not licensed to practice medicine in the State of Connecticut, may be elected as Associate Members in The Society by majority vote of the House of Delegates at any regular or special meeting. Candidates for Associate Membership shall be required to file with the Council a formal application for membership which shall be passed upon by the Council with recommendations to the House of Delegates. Associate Members shall enjoy all of the rights and privileges of members of The Society except that they may not vote or hold elective office; they may be appointed to serve upon committees and present papers before The Society or any of its scientific sections.

Section 3. Honorary Members

Eminent physicians may be elected Honorary Members by majority vote of the House of Delegates in accordance with Article VII, Section 1. Honorary Members shall not pay dues to The Society or vote or hold office.

Section 4. Life Members

Par. 1—Any member of The Society who has been an Active Member of The Society or of the American Medical Association or of constitutent associations of the American Medical Association for thirty-five consecutive years or who has reached his sixty-fifth birthday anniversary and has been an Active Member of The Society or of the American Medical Association for fifteen or more years immediately preceding said anniversary or any Active Member of The Society who becomes totally or permanently disabled shall be eligible for Life Membership. A physician eligible for Life Membership may apply for such membership to the Executive Director of The Society and shall become a Life Member on approval by the Council of such application. Life Members shall not be subject to dues or assessments but shall be accorded all the rights and privileges of Active Membership in The Society including the rights to vote and hold office. Exemption from payment of dues for Life Members shall become effective on January 1 of the year following the thirty-fifth year of membership or of the anniversary year of their sixty-fifth birthday, whichever is applicable.

Par. 2—Life Members ceasing to be in good standing or ceasing to be members of their component associations shall ipso facto have the same status in The Society. Except for the payment of membership dues, from which they are exempt, the conditions and restrictions applying to Life Members who have been expelled or are under suspension shall be the same as for Active Members.

Section 5. Student Members

Any person whose legal or family residence is in the State of Connecticut who is a regularly enrolled student and a candidate for the degree of Doctor of Medicine in an acceptable medical school, as provided in Section 20-10 (Rev. to 1975) of the General Statutes of Connecticut, or any person who is a student in an acceptable medical school located in the State of Connecticut may become a Student Member of The Society. Also, physicians not licensed to practice medicine in Connecticut who are serving as interns or residents in hospitals in Connecticut, for the purpose of extending their education and not primarily for remuneration, may become Student Members of The Society. Such membership shall be obtained by applying to the Council of The Society on a form provided for that purpose and election by vote of a majority of the Council. Student Members shall enjoy all of the rights and privileges of membership in The Society except that they shall not be eligible to vote or hold office. Student Members shall pay no dues.

Section 6. Limitation To One Membership

Any member shall hold only one type of membership in The Society at any one time.

ARTICLE V—HOUSE OF DELEGATES

Section 1. Powers And Duties

The superintendence and management of The Society is vested in the House of Delegates. The House of Delegates has the powers provided by the Charter of The Connecticut State Medical Society, as amended, which include the power to make such bylaws and regulations for the due government of The Society as may be deemed necessary. The House of Delegates is the legislative body of The Society. The House elects the general officers and certain boards and committees to conduct some of The Society's affairs but delegates to the Council all powers necessary to act as the executive and administrative body of The Society while the House of Delegates is not in session. Boards and committees elected by the House of Delegates shall be supervised by the Council between meetings of the House and shall make written reports through the Council to the House. The House of Delegates may provide for a division of the Scientific Assembly of The Society into sections for the presentation and discussion of subjects pertaining to the science and art of medicine, may make rules and regulations for the conduct of such sections, may create new scientific sections and may discontinue any existing scientific section.

Section 2. Composition

The House of Delegates shall be composed of: (a) delegates elected by the component associations according to the opportionment provided in Section 4 of Article V of these Bylaws; (b) those members of the Council who are eligible to vote in the Council; (c) all past presidents of The Society and such other members of The Society in good standing as may be approved by the House of Delegates, from time to time, who shall be ex-officio members of the House of Delegates without the privilege of voting.

Section 3. Eligibility

In order to be eligible for membership in the House of Delegates, a physician must have been an Active Member or Life Member of The Society for at least the two years immediately preceding the session of the House in which he is to serve.

Section 4. Apportionment

The number of delegates from the component associations shall be proportional to the number of Active and Life Members of the Connecticut State Medical Society in the respective county associations. Each component association shall be entitled to send from its membership to the House of Delegates each year one delegate for every thirty-five, or fraction thereof. Active Members and Life Members of the Connecticut State Medical Society as recorded in the office of the Executive Director of The Society on December 31 of the immediately preceding year.

Section 5. Registration

Par. 1. Certification. Before every session of the House of Delegates, each component association shall deposit with the Secretary of the State Society a certificate or list signed by the president or secretary of the component association or the Executive Director of the Society, listing members entitled to be seated in the House of Delegates on the basis of regular election, appointment or ex-officio status.

Par. 2. Registration. Before being seated at any annual, semi-annual, or special meeting of the House of Delegates, each member shall register with the Secretary of the Connecticut State Medical Society. The Secretary shall keep a roster, and shall be responsible to the Speaker of the House for the proper qualifications of the members seated.

All cases, wherein doubt may exist that a member is properly qualified to sit in the House of Delegates, shall be referred by the Secretary to a Reference Committee on Credentials as appointed by the Speaker of the House. At the beginning of each session of the House of Delegates, immediately after Roll Call, the Chairman of the Committee on Credentials shall report to the House. Any member of The Society who is aggrieved by a decision of the Committee on Credentials may at this time appeal to the House, and may be qualified to sit by a vote of the majority present and voting.

Par. 3. Vacancies. When an elected delegate from a component association and his elected alternate are unable to attend a specified session, the appropriate authorities of the component association concerned may appoint, in accordance with the bylaws of that component association, a substitute delegate and a substitute alternate. A substitute delegate or his alternate may be seated by the Reference Committee on Credentials provided he has been an Active Member or Life Member of the Connecticut State Medical Society for at least two years immediately preceding the session of the House in which he is to serve and provided he is properly identified as the substitute delegate or substitute alternate selected by the appropriate authorities of the component association concerned.

Section 6. Status After Seating

A delegate whose credentials have been accepted by the Reference Committee on Credentials and whose name has been placed on the roll of the House shall remain a delegate until the final adjournment of that meeting of the House of Delegates. If a delegate, once seated, is unable to be present on account of sickness or any other emergency his place may be taken by an alternate.

Section 7. Regular Meetings

The House of Delegates shall meet annually during the week of the Scientific Assembly of The Society at the time and place designated by the Council. The House of Delegates shall hold one semi-annual meeting at the time and place designated by the Council. The order of business at each annual and each semi-annual meeting shall be that arranged by the Speaker of the House of Delegates in accordance with Article V, Section 12. Business that may properly come before an annual meeting may be considered at a semi-annual meeting subject to the provisions of the Bylaws.

Section 8. Special Meetings

Special meetings of the House of Delegates shall be called by the Speaker of the House of Delegates on written request of twenty-five or more delegates elected as delegates by and from component associations, or on written request of a majority of the members of the Council eligible to vote in the Council. When a special meeting is thus called, the Executive Director shall mail a notice to the last known address of each member of the House of Delegates, at least ten days before the special meeting is to be held. The notice shall specify the time and place of meeting and the purpose for which the meeting is called. No business shall be considered at a special meeting except that for which it was called.

Section 9. Open And Closed Sessions

Every regular or special meeting of the House of Delegates shall be an open session to which any person may be admitted as an observer, unless by majority vote of the seated delegates a portion of the meeting is moved into a closed session. A closed session shall be restricted to members of The Society, to members of the staff of The Society or the staff of a component association, to official delegates from other medical societies, and to such other persons as may be admitted by majority vote of the House.

Section 10. Executive Session

By two-thirds vote of the seated delegates a portion of any meeting may be moved into executive session. An executive session shall be limited to members of the House of Delegates as defined in Sections 2, 5 and 6 of Article V of the Bylaws and to such employees of The Society as the Speaker deems necessary for the functioning of the House during the executive session.

Section 11. Quorum

A quorum at any meeting of the House of Delegates shall consist of a majority of the sum of the number of delegates to which all component associations are entitled in accordance with Section 4 of Article V of the Bylaws plus the number of members of the Council eligible to vote in the Council.

Section 12. Procedure

Par. 1. Order of Business. The Speaker, or in his absence, the Vice-Speaker, shall set the order of business for each meeting of the House of Delegates and shall have published in the agenda for that meeting the order of business to be followed. The general categories of business to come before the House at all regular meetings shall include the following:

Call to Order by the Speaker
Roll Call
Report of Reference Committee on Credentials
Speaker's Remarks and Appointment of Reference Committees
Adoption of the Minutes of the Previous Meeting
Introduction of Guests
Reports of Officers
Reports of Committees
Presentation of Awards
Old Business
New Business, and Reports of Reference Committees
Adjournment

At any meeting, by majority vote, the House may change the order of business.

Par. 2. Privilege of the Floor. The House of Delegates, in any session, by a two-thirds vote may extend an invitation to address the House to any person, who in its judgment, might assist in its deliberation.

Par. 3. Resolutions. Resolutions may be introduced by any Active or Life Member of The Society, in compliance with the following provisions.

(a) All resolutions, reports and similar items of business submitted in writing and received at the office of the Executive Director not later than thirty days before the date scheduled for that meeting shall be considered as regular business of the House of Delegates.

(b) Component county associations whose meetings are held later than thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meeting in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc. be considered regular business if they are received later than fifteen days prior to the date of the meeting.

(c) Reports, recommendations, resolutions or other new business may be presented to the House of Delegates by the Council of The Society at any time and shall be considered as regular business.

(d) Any business which does not qualify as regular business in accordance with the foregoing provisions may be accepted for consideration by a majority vote of the delegates present and shall be referred at once by the Speaker to a reference committee. When business is introduced under the provision of this paragraph the vote shall be taken without debate, except that the introducer shall be allowed not more than two minutes to explain why it should be considered as regular business.

Par. 4. Reference Committees. The Speaker of the House of Delegates shall appoint from the members of the House such reference committees as the House may approve. Each committee shall consist of five members. The chairman shall be appointed by the Speaker. These committees shall serve only during the meeting at which they are appointed.

Section 13. Referendum

The House of Delegates at any meeting may, by a two-thirds vote of the members seated in the House, submit any question pending before it to a general referendum of Active and Life Members of The Society who may vote by mail or in person and, if the members voting shall comprise a majority of the Active and Life Members of The Society, a majority of such vote shall determine the question and the result shall be binding on the House of Delegates.

ARTICLE VI—GENERAL OFFICERS

Section 1. Designations

The general officers of The Society shall be a President, a President-Elect, a Vice-President, a Secretary, a Treasurer, a Speaker of the House of Delegates, a Vice-Speaker of the House of Delegates and the Delegates and Alternate Delegates to the American Medical Association.

Section 2. Qualifications

A general officer must have been, for at least two years immediately preceding his election, an Active Member or Life Member of The Society.

Section 3. Term Of President-Elect

The President-Elect shall be elected annually by the House of Delegates. He shall serve as President-Elect until the annual meeting of the House of Delegates next ensuing after his election and shall become President upon his installation in the course of that annual meeting, serving thereafter as President until the installation of his successor.

Section 4. Terms Of Other General Officers

Par. 1. Election. The Vice-President, the Secretary, Treasurer, and the Speaker and Vice-Speaker of the House of Delegates shall be elected annually by the House of Delegates, each to take office immediately after the adjournment of the annual meeting at which he is elected and each to serve for one year or until his successor is installed. The House of Delegates shall elect Delegates and Alternate Delegates from The Society to the House of Delegates of the American Medical Association in accordance with the constitution and bylaws of that body. These Delegates and Alternates shall take office on the first of January following their election and shall serve terms of two years.

Par. 2. Vacancies. In the event of a vacancy in the office of Vice-President, Secretary, Treasurer or Vice-Speaker or Delegate or Alternate Delegate to the American Medical Association, the Council shall fill the vacancy by appointment of an Active or Life Member of The Society to serve until the next regular meeting of the House of Delegates at which a successor shall be elected.

Section 5. Successor To The President

If the President dies, resigns or is removed from office, the President-Elect shall immediately become President and shall serve for the remainder of the term of his immediate predecessor. If said remainder of the term served is less than six months, he shall also serve as President until the second annual meeting of the House of Delegates following his election as President-Elect. If a President-Elect succeeds to the Presidency six months or more before the following annual meeting of the House of Delegates, he shall serve thereafter as President until the installation of his successor.

Section 6. Successor To The President-Elect

If a vacancy occurs in the office of President-Elect less than six months before the following annual meeting of the House of Delegates, the Vice-President shall immediately become President-Elect and shall serve as President-Elect until the second annual meeting of the House of Delegates following his election as Vice-President at which meeting he shall become President upon his installation in the course of that meeting, serving thereafter as President until the installation of his successor. If a vacancy occurs in the office of President-Elect six months or more before the following annual meeting of the House of Delegates, the Vice-President shall immediately become President-Elect and shall serve as President-Elect until the next ensuing annual meeting of the House of Delegates at which meeting he shall become President upon his installation in the course of that annual meeting, serving thereafter as President until the installation of his successor.

Section 7. Acting President

If a vacancy occurs in the office of President and there are simultaneous vacancies in the successor offices defined in Article VI, Sections 5 and 6, the Secretary shall assume the duties of the office of President; the Speaker of the House of Delegates shall forthwith call a special meeting of the House of Delegates for the purpose of electing a President, a President-Elect and a Vice-President for the remainder of the terms; and the Secretary shall serve as Acting President until said three officers elected at that special meeting are installed in the course of that special meeting.

Section 8. Duties Of The President

The President shall be an ex-officio member of all committees. He shall appoint all committees not otherwise provided for in these Bylaws, subject to confirmation by the Council. He shall visit the component medical associations. He shall perform such other duties as the House of Delegates or the Council shall direct.

Section 9. Duties Of The President-Elect

The President-Elect shall aid and assist the President and shall officiate for the President during his absence or at his request.

Section 10. Duties Of The Vice-President

The Vice-President shall aid and assist the President-Elect and shall officiate for the President during the absence of both the President and President-Elect or at their request.

Section 11. Duties Of The Secretary

The Secretary, in addition to the rights and duties ordinarily devolving on the secretary of a corporation by law or custom and those granted or imposed in other provisions of the Charter and these Bylaws, shall perform such duties as may be specified by the House of Delegates or the Council. The Secretary shall make a report to the Annual Meeting of the House of Delegates.

Section 12. Duties Of The Treasurer

The Treasurer, in addition to the rights and duties ordinarily devolving on the treasurer of a corporation by law or custom, and those granted or imposed in other provisions of the Charter and these Bylaws, shall supervise the receipt of all funds due The Society, and bequests and donations made to The Society, and shall allocate funds as directed by the Council. The Treasurer shall give bond in a sum and manner of bonding prescribed by the Council. The Treasurer shall make a report to the Annual Meeting of the House of Delegates.

Section 13. Duties Of The Speaker

The Speaker of the House of Delegates shall preside at all regular and special meetings of the House of Delegates and shall perform such duties as custom and parliamentary usage require. He may address the House of Delegates at the opening of any meeting of the House of Delegates, limiting his address to matters of conduct and procedure in the House of Delegates. He shall have the right to vote in the House of Delegates only in case of a tie. He shall appoint a Committee on Credentials of five members prior to each meeting of the House of Delegates, and name a chairman thereof.

Section 14. Duties Of The Vice-Speaker

The Vice-Speaker shall aid and assist the Speaker and shall officiate for the Speaker during his absence or at his request. In case of death, resignation or removal of the Speaker, the Vice-Speaker shall immediately become Speaker and shall serve for the remainder of the term of his immediate predecessor. Except when he is officiating for the Speaker, the Vice-Speaker shall have full voting rights in the House of Delegates.

Section 15. Duties Of The Delegates To AMA

The elected Delegates, or in their absence, the Alternate Delegates, shall represent The Society in the American Medical Association in accordance with the constitution and bylaws of that association, and shall report to the Council and the House of Delegates of The Society.

ARTICLE VII—THE COUNCIL

Section 1. Powers And Duties

Par. 1. General. The Council shall be the executive and administrative body of The Society while the House of Delegates is not in session and shall control all arrangements for all meetings of The Society.

Par. 2. Chairman and Vice-Chairman. The Council shall annually elect from its membership a Chairman and Vice-Chairman. The Chairman shall preside at all regular and special meetings of the Council and shall perform such duties as custom and parlimentary usage require. He may address the Council at the opening of any meeting of the Council, limiting his remarks to matters of conduct and procedure in the Council. He shall have full voting rights in the Council. The Vice-Chairman shall aid and assist the Chairman and shall officiate for the Chairman during his absence or at his request. In the case of death, resignation or removal of the Chairman, the Vice-Chairman shall immediately become Chairman and shall serve the remainder of the term of his immediate predecessor. He shall have full voting rights in the Council. In the absence of both the Chairman and Vice-Chairman, the President shall preside.

Par. 3. Finances. The Council shall be the finance committee of The Society and shall superintend and direct all financial transactions of The Society. The Council shall prepare and submit annually to the House of Delegates a budget for the operation of The Society for the ensuing fiscal year.

Par. 4. Honorary Members. The Council may present annually to the House of Delegates the names of not more than three eminent physicians as candidates for Honorary Membership in The Society.

Par. 5. Honorary Degrees. The Council may recommend to the House of Delegates the bestowal of an Honorary Degree in Medicine upon any person not a physician, distinguished in the sciences of medicine or for contribution to human welfare.

Par. 6. Nominations. The Council shall be the Nominating Committee of The Society. The President shall be the chairman of the Nominating Committee. The Nominating Committee shall report its nominations to the first session of each annual meeting of the House of Delegates; following this report nominations may be made from the floor.

Par. 7. Annual Report. The Council shall make an annual report to the House of Delegates.

Par. 8. Student Members. The Council shall elect Student Members of The Society.

Par. 9. Employees. The Council shall have power and authority, subject to the limitation imposed by paragraph one of Section 3 of Article VII of these Bylaws, to employ, discharge, arrange duties, and fix compensation of and for any employee whom it may find necessary for conducting the affairs of The Society.

Par. 10. Counsel. The Council shall employ legal counsel and/or a legislative agent as necessary in the performance of its duties.

Section 2. Composition

The Council shall consist of the General Officers, any Active or Life Member of The Society who is serving as a general officer of the American Medical Association as defined in Article VII of the Constitution of that Association during his tenure as such general officer, one Councilor and one Associate Councilor from each component association, and one additional Associate Councilor from each component association having over 750 members, and one Councilor-at-Large. In the event that both the Councilor and the Associate Councilor(s) from a county association cannot be present, the President of that association may appoint a substitute Councilor. The Executive Director and Editor of Connecticut Medicine may participate ex-officio, and without the right to vote, in meetings of the Council.

Section 3. Executive Director

Par. 1. Appointment. The Council shall appoint an Executive Director, subject to the approval of the House of Delegates.

Par. 2. Duties. The Executive Director shall exercise all such powers, shall carry out all such duties, and shall observe all such directions and restrictions as the Council may from time to time impose upon him, but in default thereof, the Executive Director shall manage and supervise the ordinary affairs and business of The Society, and do any and all acts and things necessary or conductive to such management. The duties of the Executive Director shall include but not thereby be limited to the following:

(a) To manage The Society's office, grounds, equipment and other property.

(b) To employ such assistance as may be approved by the Council and to supervise all employees of The Society.

(c) To maintain membership and biographical records.

(d) To collect The Society dues except from the members of any component association which collects The Society dues.

(e) To collect American Medical Association dues from all members of The Society who are members of the American Medical Association.

(f) To make necessary business arrangements, including those for commercial exhibits.

(g) To record attendance and proceedings of all meetings of the House of Delegates, the Council, and other official meetings of The Society and to maintain records of all meetings of committees of The Society.

(h) To maintain The Society's financial records in cooperation with the Treasurer, The Society's bankers and auditors.

(i) To pay authorized expenditures from funds allocated by the Treasurer.

(j) To conduct the official correspondence of The Society including notifying members of meetings, officers of their election and committees of their appointment and duties.

(k) Provide guidance services to physicians seeking professional placement in Connecticut.

(l) To maintain working contact and cooperation with the component associations of The Society and with the Woman's Auxiliary.

(m) To maintain active liaison with State government agencies.

(n) To maintain active liaison with the headquarters of the American Medical Association.

(o) To maintain active liaison with voluntary health agencies serving Connecticut.

(p) To implement and coordinate the activities of The Society with respect to legislative programs.

(q) To implement and coordinate The Society's public relations and publicity programs.

(r) To aid and assist the officers, boards and committees of The Society in the performance of their powers and duties.

Section 4. Terms Of Council Membership

Par. 1. General Officers. The terms of membership in the Council of the general officers of The Society, and any general officer of the American Medical Association shall be the terms of their offices as defined in these Bylaws.

Par. 2. Councilors and Associate Councilors. Councilors and Associate Councilors, who shall serve for two years, shall be elected at the annual meeting of each of the County Associations in Hartford, New London, Windham, and Middlesex Counties in the odd-numbered years, and Councilors and Associate Councilors, who shall serve for two years, shall be elected at the annual meeting of each of the County Associations in New Haven, Fairfield, Litchfield, and Tolland Counties in the even numbered years.

These Councilors and Associate Councilors shall assume office immediately following the Annual Meeting of the House of Delegates.

Par. 3. Councilor-at-Large. The Council may, in its discretion, recommend to the House of Delegates at any annual meeting, the election of a Councilor-at-Large, who shall serve for a term of one year.

Par. 4. Limitations of Tenure. No Councilor or Associate Councilor elected by a component association shall serve more than three successive terms of two years each in his respective office, but after a lapse of one term of two years such Councilor or Associate Councilor shall be eligible for re-election.

Par. 5. Vacancies. Any vacancy in the office of Councilor or Associate Councilor from a component association shall be filled by that component association. Any vacancy in the office of Councilor-at-Large may be filled by the Council by appointment of an eligible member of The Society to fill the unexpired portion of the term.

Section 5. Meetings

Par. 1. Regular and Others. The Council shall meet at least every two months throughout the year, except during the months of July, August, and September, and at such other times as a meeting may be called by the Chairman of the Council or upon petition of three members of the Council. The President shall call the initial meeting of the Council as soon as possible after the Annual Meeting of the House of Delegates, and shall preside at this meeting until the Council elects its chairman and vice-chairman.

Par. 2. Quorum. A quorum shall consist of more than 50% of the voting members of the Council, with representation from at least five Counties.

Section 6. Power To Fill Vacancies

The Council shall have power to fill any vacancy which may occur in any elective office, board, or committee, for which the power to fill such vacancy is not otherwise provided, until the next regular meeting of the House of Delegates.

Section 7. Policy Initiation Or Commitment

No officer or board or committee or section or employee shall inaugurate or initiate or commit The Society to any policy unless same has been expressly approved by the House of Delegates or the Council.

ARTICLE VIII—SCIENTIFIC ASSEMBLY

Section 1. Definition

The Scientific Assembly of The Society is the convocation of its members for the presentation and discussion of subjects pertaining to the science and art of medicine.

Section 2. Meetings

Par. 1. General. General meetings of The Society shall be held annually, at a time and place designated by the Council. The annual meeting of the House of Delegates shall be held during the week of the Scientific Assembly.

Par. 2. Sections

(a) Purposes: To conduct the work of the Scientific Assembly and for related purposes, the formation of Sections of The Scientific Assembly of The Society may be authorized by the House of Delegates.

(b) Authorization: Sections of the Scientific Assembly may be created or discontinued by the House of Delegates in accordance with Article V, Section 1. of these Bylaws. Any group of physician members of The Society having a common interest in a recognized branch of medicine may, through application filed with the Council, petition the House of Delegates for authorization to form a Section in that recognized branch of medicine.

(c) Petition: A petition to the House of Delegates for authorization to form a Section shall be submitted first to the Council. It shall be in writing and include a roster of interested members, officers pro tem, and a set of Bylaws which contain the purposes of the Section and the provisions for granting membership, assessment of dues and the election of officers. Such petition shall be examined by the Council and, if found to be in order, shall be transmitted to the next regular meeting of the House of Delegates with recommendation.

(d) Membership: It is the intention of the House of Delegates that the sole qualifications for physician membership in a Section of the Scientific Assembly shall be (1) Active Membership, Life Membership or Student Membership in good standing in The Society, and (2) a bona fide, demonstrable interest in the work of the Section; and that there shall not be other contingent qualifications for such membership. Questions concerning these qualifications shall be resolved by the Council. Any Active Member, Life Member or Student Member in good standing in The Society may apply for Section Membership to the Secretary of the Section of interest and such application shall be processed expeditiously to completion in accordance with the Bylaws of the Section.

(e) Officers: Each Active Section shall have, as officers, a Chairman and a Secretary and such other officers as the members of the Section may deem advisable, each to be elected by the voting members of the Section during the annual meeting of the Section and to serve for one year. The rights to vote and hold office in a Section shall be limited to Active Members and Life Members of The Society who are in good standing. Following each annual election of officers the Secretary of the Section shall promptly inform the office of the Executive Director of The Society of the names of those elected.

(f) Meetings: Each Active Section shall hold an annual meeting during the annual meeting of the Scientific Assembly of The Society, or, if not practical due to a conflict with a meeting of a recognized national organization, during the same calendar month as the Scientific Assembly and at such other times as the members or officers may deem advisable. The officers of each Active Section shall arrange the programs for the annual meeting during the Scientific Assembly in accordance with rules established by the Council and the House of Delegates.

(g) Definition of Active Section: With reference to preceding Subparagraphs (e) and (f) , an Active Section of the Scientific Assembly of The Society is defined as one that complies fully with the provisions of these subparagraphs annually. Failure to hold a meeting of the Section during the Scientific Assembly for three consecutive years shall be cause for the Section to lose automatically its active status, and, further, shall be considered cause for the House of Delegates to withdraw authorization for the Section.

Section 3. Registrants

Par. 1. General Meetings. The following shall be permitted to register at any general meeting of the Scientific Assembly subject to rules and regulations of the House of Delegates and the Council:

(a) Members of The Society—Active, Associate, Honorary, Life and Student Members.

(b) Delegates to The Society from constituent associations of the American Medical Association.

(c) Guests invited by the House of Delegates, the Council, The Executive Director, general officers or officers of a Section.

(d) Residents and interns who are certified for registration by the Executive Director.

(e) Medical students of approved medical schools who are certified for registration by the Executive Director.

Par. 2. Section Meetings. Any Section may exclude from its meetings all but duly registered members of the Section when the Section is electing officers or conducting business of the Section.

Section 4. Quorum

A quorum at any general meeting or Section meeting of the Scientific Assembly shall be those present at a duly called meeting or, in the case of a Section, the number or proportion designated by the Section.

ARTICLE IX—"CONNECTICUT MEDICINE"

Section 1. Election Of Editor

The Council shall elect an Editor of "Connecticut Medicine" to serve until his successor takes office after election by the Council. The Editor shall serve ex-officio as a member of the Council without the right to vote.

Section 2. Powers And Duties Of Editor

The Editor of "Connecticut Medicine" shall exercise all such powers, shall carry out all such duties, and shall observe all such directions and restrictions as the Council may from time to time impose upon him, but in default thereof, the Editor of "Connecticut Medicine" shall manage and supervise the publication of "Connecticut Medicine" with full responsibility for editorial content, advertising sales, and circulation, as well as approval of all printing and paper contracts for the publication. He shall coordinate his activities with those of the Executive Director and the latter's office and to that end, he may utilize employees, equipment and facilities of The Society which are under the Executive Director's supervision and which are assigned to his service by the Executive Director.

Section 3. Finance

The Executive Director periodically shall receive from the Treasurer pro-rated portions of the fund allocated to the Editor's office and from such funds the Executive Director shall make direct payment of all expenditures necessary for the publication of "Connecticut Medicine." The report of such expenditures shall be included in the report of the Treasurer to the House of Delegates at its annual meeting.

ARTICLE X—COMMITTEES OF THE COUNCIL

Section 1. Ad Hoc Committees, Representatives and Advisors

The Council shall appoint such ad hoc committees, representatives and advisors as may, from time to time, be considered necessary or advisable to assist the Council in discharging its duties as defined in these Bylaws. Any member of The Society in good standing may be appointed to serve in these posts. The terms and duties of members serving on ad hoc committees or as representatives and advisors shall be set by the Council but, in any event, shall be reviewed annually by the Council. A current listing of such ad hoc committees, representatives and advisors, including descriptions of the functions of each, shall be maintained by the Executive Director's office. In its discretion, the Council may discharge or terminate ad hoc committees, representatives and advisors or may recommend to the House of Delegates that they be made standing committees, representatives and advisors of the House in accordance with Article XI.

Section 2. Council Subcommittees

The Council may, from time to time, appoint ad hoc subcommittees to assist in expediting the business of the Council. Such ad hoc subcommittees shall be appointed from the membership of the Council and all appointments shall be reviewed annually by the Council at its first meeting following the annual meeting of the House of Delegates. Upon completion of their assignments, such ad hoc subcommittees may be discharged by the Council at will.

ARTICLE XI
STANDING COMMITTEES, REPRESENTATIVES AND ADVISORS OF THE HOUSE OF DELEGATES

Section 1. Purpose and Election

Par. 1. Purpose. In order to provide for continuing study, recommendation and functional productivity in the several areas of purpose stipulated as being those of The Society in Article II, Section 1, of these Bylaws, the House of Delegates shall establish and maintain such standing committees, representatives and advisors as it deems necessary and shall define the titles, duties and terms of office thereof.

Par. 2. Formation and Termination. The House of Delegates may act to form or terminate standing committees, representatives and advisors at any regular meeting or at a special meeting called for the purpose. A majority vote of the delegates present and voting shall be required to approve such action.

Par. 3. Qualifications. In general, any Active or Life Member of The Society in good standing is eligible for election to these posts. In certain instances, however, the House of Delegates may limit election eligibility to members having special qualifications such as being officers or committee chairmen (by title) or having served in some capacity with The Society or the component County Associations within a stipulated period of time preceding their election.

Par. 4. Election. At each annual meeting of the House of Delegates, the Council shall present a complete slate of nominees for all standing committees, representatives and advisors extant at the time of such meeting. Following presentation of the slate by the Council, nominations may be made from the floor. The House of Delegates shall then act to elect the members of all standing committees and to designate the chairmen thereof and to elect the members to serve as representatives and advisors and make such special designations of same as may be indicated. The election of standing committees, representatives and advisors shall require a majority vote of the delegates present.

Par. 5. Term of Office. The terms of committees, representatives and advisors shall be set by the House of Delegates. Unless otherwise prescribed by the House of Delegates, the terms of office are for one year and shall become effective immediately following the annual meeting of the House of Delegates.

Par. 6. Vacancies and Interim Appointments. In the event of a vacancy on any standing committee or in the posts of representatives and advisors, the Council shall fill such vacancy by appointment and the member appointed shall serve until the next annual meeting of the House of Delegates. In its discretion, the Council may also appoint additional members to serve on standing committees and as representatives and advisors provided that such appointments do not exceed the numerical strengths stipulated by the House of Delegates. Members so appointed by the Council shall serve until the next annual meeting of the House of Delegates.

Section 2. Administration

Par. 1. Duties. The office of the Executive Director shall maintain a committee book at The Society's headquarters which shall list the titles of all standing committees, representatives and advisors authorized by the House of Delegates and record the composition and duties of each as defined originally by the House of Delegates and as may be amended from time to time by the House of Delegates. For the purpose of avoiding the formation by the House of Delegates of standing committees, representatives and advisors having duplicative or overlapping functions, the office of the Executive Director shall also list all authorized standing committees, representatives and advisors under categorical groups which are appropriate to their designated areas of activity. Such categorical groups may include, but shall not be limited to, the following: Education and Hospitals; Medical Economics; Publications; Scientific Activities; Socio-Environmental Medicine; Public Affairs; Judicial; and Representatives and Advisors.

Par. 2. Roster. The office of the Executive Director shall maintain at The Society's headquarters a current roster of members serving on all standing committees and as representatives and advisors who have been elected by the House of Delegates and shall revise such roster appropriately following each meeting of the House. The office of the Executive Director shall also notify all such members of their election and of their duties.

Par. 3. Standing Committees—Organization and Operation. Each standing committee shall organize by electing its own vice-chairman, secretary and such other officers as it deems advisable and shall establish rules to govern its operation provided that such rules do not conflict with The Society's Charter or these Bylaws or with policies established by the House of Delegates or the Council. A standing committee may meet jointly with other standing committees, with invited guests who are members of The Society, and with others for any purpose within the purview of the committee. The Society's headquarters shall be the official headquarters of all standing committees. Each standing committee shall annually submit to the Council a proposed budget for the ensuing fiscal year and shall not expend or contract to expend funds in excess of its budget allocation without prior approval by the Council. Committees may initiate policy statements for The Society, but shall not publicize or implement such statements until they have been approved by the Council and/or the House of Delegates.

Par. 4. Representatives and Advisors—Organization and Operation. Representatives and advisors are elected by the House of Delegates as individual members or as groups of members and, in general, shall represent The Society at meetings of other organizations or in joint meetings with representatives of other organizations. Funds for the functioning of representatives and advisors may be provided as annual budget allocations, as with standing committees, or on the basis of requests for reimbursement of actual expense. No sponsorship or financial commitments are to be made by representatives or advisors on behalf of The Society to anyone or any agency without prior approval by the Council and/or the House of Delegates. The Society's headquarters shall be the headquarters for all representatives and advisors.

Par. 5. Reports. All standing committees, representatives and advisors shall, in advance of each annual meeting of the House of Delegates, submit to the Council in writing reports on their activities during the year past. The Council shall transmit all such written reports to each annual meeting of the House of Delegates and shall direct the Speaker and/or Vice-Speaker to make recommendations concerning the action required on each report. Reports may also be submitted to the Council at other times, either as information or for the purpose of making recommendations to the Council and/or the House of Delegates, and those calling for action by the House of Delegates shall be transmitted by the Council, with recommendation, to the next regular meeting of the House of Delegates or to a special meeting called for the purpose.

ARTICLE XII—DUES

Section 1. Prescription

Annual dues for Active Members shall be prescribed for the ensuing fiscal year in an amount recommended by the Council and approved by the House of Delegates and shall be an equal per capita assessment upon each Active Member except that physicians who become Active Members during the latter half of a fiscal year will be assessed one-quarter of the annual dues for that fiscal year.

Section 2. Publications

Membership dues shall include subscriptions to "Connecticut Medicine" and such other publications of The Society as are intended for distribution to all Active Members.

Section 3. Exemptions

The dues of any member may be remitted by vote of the Council on recommendation of a Councilor or Associate Councilor elected by the respective component association provided there has been prior remission of dues by that association. Honorary Members, Life Members, Associate Members and Student Members shall not be subject to assessment of dues but may be charged for subscriptions to publications, registration fees at scientific sessions, and the like.

Section 4. Delinquency

An Active Member is delinquent if his dues are not paid by August first of the year for which dues are prescribed and shall forfeit his active membership in The Society if he fails to pay the delinquent dues within thirty days after notice of his delinquency has been mailed to his last known address by the Executive Director of The Society. Active Members of The Society who have been dropped from the active membership roll for nonpayment of dues cannot be reinstated until such indebtedness has been discharged, but such indebtedness shall apply only to the one fiscal year of delinquency.

ARTICLE XIII—FUNDS AND EXPENSES

Section 1. Fiscal Year

The fiscal year of The Society shall commence on January first and terminate on December thirty-first of each year.

Section 2. Deposit Of Funds

All funds of The Society shall be deposited promptly upon receipt in a state or national bank.

Section 3. Budget

The annual budget of The Society for each fiscal year shall be prepared by the Council and shall be presented by the Treasurer to the House of Delegates for approval. The per capita assessment of dues and any other assessments for the ensuing fiscal year shall be recommended by the Council and shall be transmitted by the Treasurer to the House of Delegates for approval. No request or resolution appropriating funds of The Society shall be considered by the House of Delegates unless the Council has made prior review of such request or resolution and has transmitted recommendation thereon to the House of Delegates.

Section 4. Fidelity Bonds

All officers of The Society and other persons responsible for the receipt, custody and disbursement of Society funds shall be bonded at the expense of The Society by such fidelity bonds as the Council shall prescribe.

ARTICLE XIV—COMPONENT ASSOCIATIONS

Section 1. Definition

The county medical associations in Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland, and Windham Counties now in operation and in affiliation with The Connecticut State Medical Society shall be the component county associations, of The Society.

Section 2. Function

Par. 1. The function of the component medical associations shall be to bring together into one organization the physicians of each county and these associations shall be united for the purpose of organizing the medical profession in the State of Connecticut as provided in Article II of these Bylaws.

Par. 2. Each component medical association shall stimulate, foster and cooperate with the local medical societies in the county.

Section 3. Eligibility For Membership

Requirements for eligibility for membership in a component association shall be those determined by that association provided such requirements do not conflict with the Charter or Bylaws of The Society or with the Constitution or Bylaws of the American Medical Association.

Section 4. Transfer Of Component Association Membership

A member of a component association of The Society who removes his residence to another county within this state and who wishes to transfer his membership to the component association in the county of his new residence may do so upon the presentation of a certificate signed by the Secretary of the component association of which he is a member. This certificate shall state that he is a member in good standing in the component association in the county where he previously resided and that his financial obligations to that association for the current year have been paid. The certificate shall be accompanied by a regular application for membership. The component association in the county of his new residence shall add him to the rolls of that association without formality or without charging any dues for the remainder of the year of his transfer.

Section 5. Transfer From Another State Society

A member of a state medical society in another state, that is a component of the American Medical Association, wishing to transfer his membership to a component association of The Society shall present to the Secretary of the component association of The Society in which he is seeking membership a certificate from the Secretary of the county or state medical society of his previous residence. This certificate shall state that he is a member in good standing in that county or state medical association. This certificate and a properly completed application for membership shall be forwarded to the Board of Censors or Credentials Committee of the component association in this state in which he is seeking membership and that Board of Censors or Committee on Credentials may recommend his election at the next meeting of the component association subject to membership eligibility rules of that component association.

Section 6. Membership Roster

The Secretary of each component association shall keep an individual record of the members of that association, and this record shall include the full name, address, college degrees with year, medical schools attended with school and year of graduation, hospital affiliations, type of special practice, if any, and the date of registration in this state. Notations shall also be made concerning transfer and termination of membership.

Section 7. Discipline

Par. 1. Original Jurisdiction. In its disciplinary proceedings other than appeals from acts of component associations, the Judicial Committee of The Society shall afford to the member whose conduct is involved the following rights in protection of his honor and professional reputation and the fairness of the proceedings:

(a) A written statement as to the nature and source of the charges made against the member;

(b) One or more hearings before the Judicial Committee, each such hearing to be held upon not less than 10 days' prior written notice to the member;

(c) At each such hearing, the right to be present and to be advised by a medical colleague and by legal counsel, to present witnesses and other relevant evidence, to cross-examine witnesses testifying against him, and to present oral argument.

Par. 2. Appeals from Component Associations.

(a) Any member of The Society who is aggrieved by disciplinary action of the component association of which he is a member shall have the right of appeal to the Judicial Committee of The Society, which shall review the proceedings and render a decision as herein provided.

(b) Each component association, upon taking such disciplinary action, shall send to the member by registered mail, written notice thereof and of his right of appeal under this Paragraph.

(c) Execution of such disciplinary action shall be automatically stayed during the 15 day period provided for in subparagraph (e) (1) of this Paragraph and also, unless the component association otherwise provides, during the period of the pendency and disposition of an appeal to the Judicial Committee.

(d) The members of the Judicial Committee shall be impartial to the parties and to the substance of the charges. Therefore, if anyone shall disqualify himself or, for cause on challenge, shall be disqualified by vote of one-third of the members of the Judicial Committee present and voting, the Chairman of the Council and the President of The Society shall appoint a substitute.

(e) The procedure for taking and perfecting such an appeal shall be as follows:

(1) Within 15 days following receipt of notice of the action of the component association the member shall file with the Executive Director of The Society an original and two copies of a Notice of Appeal personally signed by the member, which shall reasonably identify the component association concerned and the action from which the appeal is taken.

(2) Within 10 days following receipt of such Notice of Appeal, the Executive Director shall send one copy thereof to the Secretary of the component association and one copy to the Chairman of the Judicial Committee.

(3) Within 30 days following its receipt of such Notice of Appeal, the component association shall file with the Judicial Committee a concise summary statement of the case, stating the charges against the appellant, the findings of fact, and the penalty imposed, all as determined by the disciplinary body or official of the component association, and shall at the same time file a copy of such summary statement with the appellant.

(4) Within 30 days following receipt of such copy of such summary statement the appellant shall file with the Judicial Committee a reply statement specifying the procedures, findings of fact, conclusions or penalties which the appellant intends to controvert or challenge, and shall at the same time send a copy of such reply statement to the Secretary of the component association.

(5) Within 10 days following receipt of the appellant's reply statement, the Judicial Committee shall set a date for a hearing on the appeal and shall give written notice of the date, time and place thereof to the appellant and the component association, which date shall be not less than 10 days nor more than 30 days after the date such notice is given.

(f) The procedure for hearing and decision on the appeal shall be as follows:

(1) The appellant and the component association, through its proper representatives, shall each have the same right to be present, to be advised and counselled, to cross-examine witnesses and to present oral argument as is provided in Paragraph 1 of this Section with respect to hearings by the Judicial Committee in original jurisdiction cases.

(2) At any time prior to the conclusion of the hearing the appellant and the component association may submit written briefs, accompanied by such documentary evidence as may be relevant, as to his or its position and claims, serving a copy thereof on the other party. No reply brief shall be filed by either party except upon prior leave of the Judicial Committee.

(3) The Judicial Committee shall determine the procedure at the hearing, including the time allotted to each party and the order of presentation.

(4) Except as the Judicial Committee shall determine under exceptional circumstances that it is necessary in order to prevent a miscarriage of justice, neither the appellant nor the component association shall present the direct testimony of individual witnesses.

(5) For cause shown and upon reasonable notice, the Judicial Committee may postpone, adjourn or continue the hearing if such action is by it deemed necessary to a full and fair review of the case.

(6) The Judicial Committee, upon written request received at any time prior to the expiration of the period of time herein limited for any action to be taken by any party to an appeal, may extend for such period as it may deem reasonable the time limited for such action. Failure of a party to take any such action within the period so limited therefor (including extensions thereof, if any) shall be grounds for dismissal of the appeal, as to the appellant, or its remand to the component association under subparagraph (g) (3) of this Paragraph, or for the Judicial Committee to proceed with a hearing of the appeal as provided in subparagraph (e) (5) of this Paragraph.

(g) The disposition of the appeal shall be made in accordance with the following rules:

(1) The Judicial Committee shall not try the case *de novo*, but shall sit as a Board of Review and shall dispose of the case upon its determination of the following basic questions:

(A) Whether the appellant received a fair hearing in accordance with the principles stipulated in Paragraph 1, of Article XIV, Section 7, before the disciplinary authority of the component association;

(B) Whether the facts found against the appellant are reasonably supported by the evidence considered by such disciplinary authority;

(C) Whether the penalty imposed was reasonable.

(2) In reaching its decision the Judicial Committee shall vote by written ballot on the three basic issues above described and upon the final disposition of the appeal. In each such vote the decision shall be rendered by a majority of the members of the Committee present at and participating in the hearing.

(3) Unless at least one of items A, B and C of subparagraph (1) above shall be decided by the Judicial Committee in the negative, the Committee's decision shall be that the appeal is dismissed. If any one or more of such items shall be decided in the negative by the Judicial Committee, it shall remand the case to the component association under one or more of the following:

(A) With recommendation as to the holding of a new hearing on the original charges;

(B) With direction to dismiss the charges altogether;

(C) With direction that the penalty imposed is to be reduced.

(4) Upon rendition of its decision, the Judicial Committee shall give written notice thereof to the Executive Director of The Society and, by registered mail, to the Secretary of the component association and to the appellant, and, if the appellant is a member of the American Medical Association, notify him of his right of appeal under the following paragraph.

(5) The disciplinary findings and acts of the Judicial Committee are final, whether in exercise of its original jurisdiction or its jurisdiction in appeals from component associations. Members of the AMA may appeal such findings and acts to the Judicial Council of the AMA under AMA rules and procedures. Execution of acts of the Judicial Committee shall be stayed automatically during such period as may be authorized by the AMA for any such appeal made to the AMA, unless the Judicial Committee otherwise provides during the period of the pendency and disposition of such appeal.

(h) All periods of time herein prescribed for sending or filing any notice or other document shall be determined by the U.S. Postal Service postmarked date on which such notice or document is mailed.

Par. 3. Expulsion and Suspension. An Active or Life Member shall be expelled or suspended, as the case may be, upon receipt by the Executive Director of written certification by the Chairman of the Judicial Committee setting forth:

(a) That the Judicial Committee has found, after due notice and hearing, as provided in Paragraph 1 of this Section, that the member has been convicted by final judgment of any Court, of a criminal offense which is punishable, irrespective of the punishment which in fact is imposed for such conviction, by imprisonment for a term of one year or more in a penal institution of the United States, of this State or of any other State; and

(b) That the Judicial Committee has determined that the member shall be expelled or shall be suspended from Active or Life Membership for a specified term, not to exceed two years.

The Executive Director, within 10 days of receipt of such written certification, shall send a copy thereof to the Secretary of the component association of which the expelled or suspended Active or Life Member is a member.

Section 8. Termination Of Membership

When membership in a component association terminates for any cause, membership in the Connecticut State Medical Society shall be terminated automatically as of the same date.

Section 9. Dues

Any component association may, at its option, collect the annual dues assessed by The Society in conformity with regulations established by the Treasurer of The Society. Bills for these dues shall be rendered to all members immediately following January 1 of each year and the component association shall forward all monies so collected on behalf of The Society to the Treasurer of

The Society quarterly and at such other times as the Treasurer may direct and they shall accompany all payments with a report on a form to be provided by the Treasurer. If a component association does not elect to collect the annual dues assessed by The Society as provided above, the Treasurer of The Society shall collect the annual dues assessed by The Society from the members of that component association and collect also the dues assessed by that county association. In that event, the Treasurer of The Society shall remit to the component association periodically all monies collected on behalf of that association and shall file an accounting of all component association assessments so collected for the year just closed with the component association before the 15th of January of each year.

Section 10. Bylaws

The component associations shall have the power to adopt only such bylaws as are not in conflict with the Bylaws of The Connecticut State Medical Society. In the event of an existing or apparent conflict, the Bylaws of The Society shall take precedence over those of a component association.

ARTICLE XV—AMENDMENTS TO BYLAWS

Section 1. Action

The Bylaws of The Society may be amended by a majority vote of the total number of the voting members of the House of Delegates.

Section 2. Procedure

Proposed amendments to the Bylaws shall be submitted to a meeting of the House of Delegates and shall immediately be placed upon the table without discussion. Such amendments shall lie upon the table until the next regular meeting of the House of Delegates and shall be published in "Connecticut Medicine" on one or more occasions prior to that next meeting and shall be published in the call to that meeting, at which meeting the amendments shall be taken off the table and acted upon by the House of Delegates.

ARTICLE XVI—PARLIAMENTARY PROCEDURE

Section 1. Rules Of Order

In all matters of parliamentary procedure, The Society shall be governed by the most recent edition of Roberts Rules of Order (Revised).

Section 2. Enablement Clause

The adoption of these Bylaws rescinds and revokes all previous Bylaws of The Society and supersedes their operation.

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Indications: Nutritional supplementation in conditions in which water-soluble vitamins are required prophylactically or therapeutically.

Warning: Not intended for treatment of pernicious anemia or other primary or secondary anemias. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with pernicious anemia who receive more than 0.1 mg of folic acid per day and who are inadequately treated with vitamin B_{12}.

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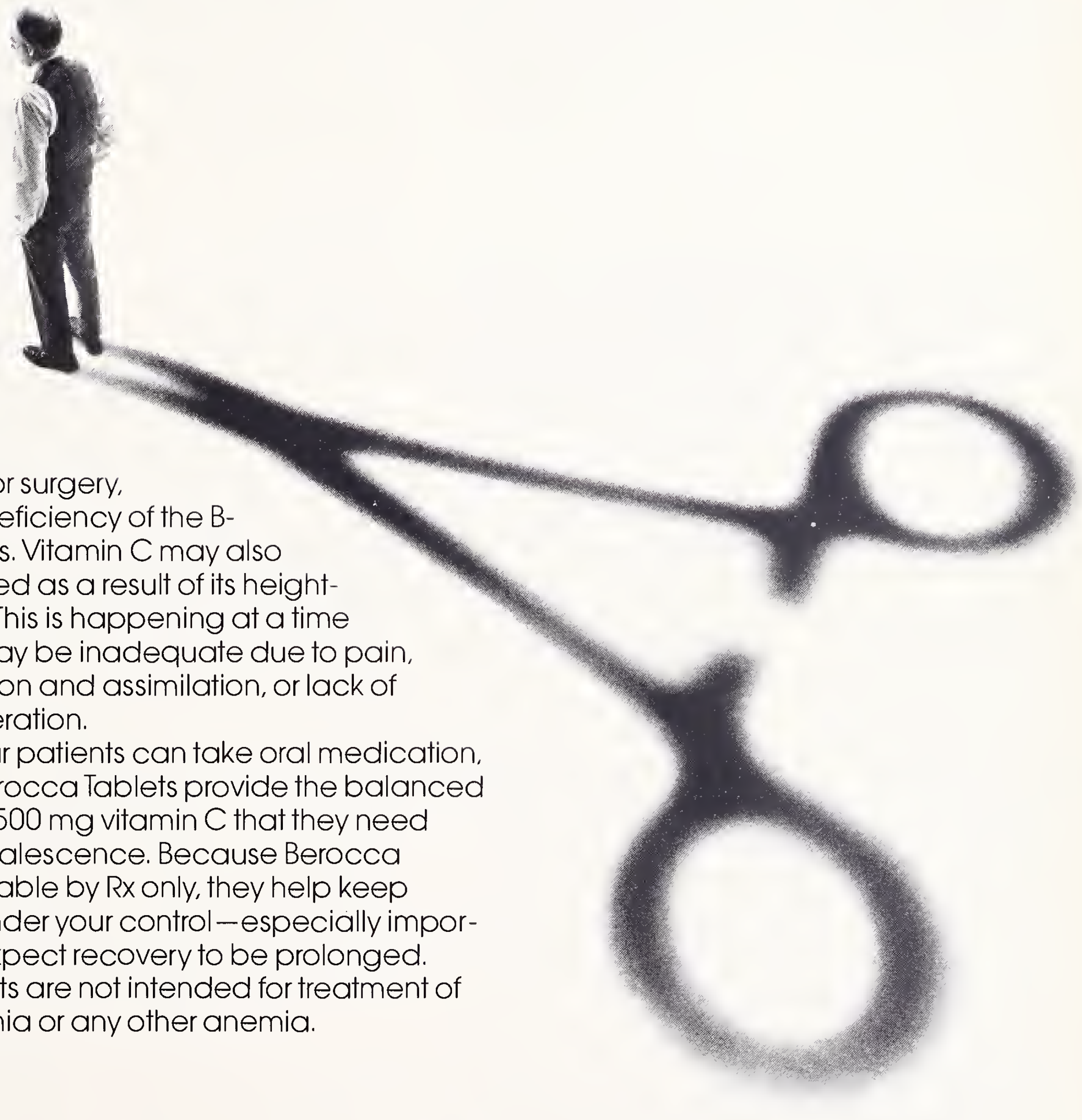

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PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine.*

All of the opportunities for practice and the availability of candidates for placement in Connecticut were updated as of August 1, 1975. At the time this material went to press approximately thirty five new curriculum vitae had been received from physicians who will be available for placement in Connecticut during 1976. The limitation of space prevents the publication of these names all at one time. Individuals or institutions wishing information on candidates are urged to call the Physician Placement Service.

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

(If no name is listed, contact the Physicians Placement Service)

Anesthesiology: Board eligible. Desires medium sized community. FLEX. Trained in India, England and Mt. Sinai in N.Y.C. Available now. S.A. Khan, M.D., 212-650-7475.

Anesthesiology: Board eligible. Passed Part I. Presently in practice. F.A.C.A. 32 years old. Experience at Columbia-Presbyterian, Geisinger Medical Center, Danville, Pa. M.H. Kulkarni, M.D., 254-20 74th Avenue, Glen Oaks, N.Y. 11004.

Anesthesiology: Board eligible. Available now. Connecticut license. Trained in Japan, Canada. Presently Fellow at Wills Eye Hospital, Pa. Tyrone Leung, M.D., 2121 Mt. Vernon Street, Philadelphia, PA. 19130.

Dermatology: Board eligible. Connecticut license pending. FLEX. Available now. 32 years old. Completing training at Albert Einstein, Bronx. Robert Schneider, M.D., 1945-16 Eastchester Road, Bronx, N.Y. 10461.

Family Practice: Completing family practice residency in 1976 at So. Illinois School of Medicine. MD from University of Rochester. 27 years old. Married. Desires group or associate practice in medium sized community with hospital. Daniel M. Blumkin, M.D., 330 Norwalk Road, Springfield, IL. 62704.

Internal Medicine: Gastroenterology. Available 1976. Solo or associate practice in medium sized community. 32 years old. Married. Temple University. MD from University of Cincinnati. GI Fellowship at University of Kansas. Perry Barag, M.D., 9630 Outlook Drive, Overlook Park, KS. 66207.

Internal Medicine: Gastroenterology. Available 1976. Connecticut license. 29 years old. Single. MD from N.Y. Medical College. Presently on Fellowship at Bridgeport Hospital. Especially interested in southwestern Connecticut. Detailed resume available at CSMS.

Internal Medicine: Available 1976. Presently Capt. in USAF. Board certified. Diplomate, National Boards. Bucknell undergraduate. Bowman Gray School of Medicine, Winston-Salem, N.C., 1971. Residency at Emory, Atlanta, Ga. Desires group or associate practice. Experience in primary care. Thomas W. Cann, III, M.D., 122 B Hercules, Sheppard Air Force Base, TX. 76311.

Internal Medicine: Cardiology. Available now. Board eligible. 31 years old. Completing two years at Sinai of Detroit. Umakant S. Doctor, M.D., Department of Cardiology, Sinai Hospital, 6767 West Outerdrive, Detroit, MI. 48235.

Internal Medicine: Available 1976. Group practice with subspecialty in rheumatic and connective tissue diseases. Board certified. Presently at University of Chicago. 32 years old. Stuart L. Posner, M.D., 475 Shenstone Road, Riverside, IL. 60546.

Internal Medicine: Available now. Discharged from service. Desires Western Connecticut. Board certified. Group or associate practice. ER experience. Bruce A. Sobin, M.D., 2121 West Main Street, Portsmouth, R.I. 02871.

Internal Medicine: Oncology-Hematology. Board certified. Available July 1976. Connecticut license. Available part time now. Mark A. Tuckfeld, M.D., 36 Florida Hill Road, Ridgefield, CT. 06877.

OB/GYN: Available July 1976. Group or associate practice. Board eligible. Presently at Wilmington Medical Center. Graduate of College of Osteopathic Medicine and Surgery. D.O. Completed service requirement. Charles M. Fleisch, D.O., 1703 Chelmsford Circle, Newark, DE. 19713.

OB/GYN: Presently in practice. Wishes to return to Connecticut. Connecticut license. A.E. Midolo, M.D., F.A.C.O.G., 133 Leroy Street, Binghamton, N.Y. 13905.

Ophthalmology: Available in 1976. Connecticut license pending. Completing training at Friedenwald Eye Clinic. M.D. from St. Louis University. Martin E. Cutler, M.D., 31 Acorn Circle, Towson, MD. 21204.

Orthopedics: Desires Western Connecticut. Presently in practice. Available with short notice. 35 years old. Lawrence A. Lefkowitz, M.D., 1020 NE 178th Terrace, North Miami Beach, FL. 33162.

Otolaryngology: Wishes to relocate in Connecticut. Board certified. Presently in practice. Harvey M. Plasse, M.D., 300 East 56th Street, New York, N.Y. 10022.

Occupational Medicine: Part Time or Full Time. Desires Greater Hartford or New Britain area. Write CSMS for details.

OB/GYN: Presently chief resident in Ob/Gyn at Washington University Hospital in St. Louis. Board eligible. Desires group or associate practice. Available July 1976. Jr. Fellow of ACOG. Trained in perinatology, endocrinology, oncology. Murray R. Master, M.D., Box 155, Barnes Hospital, St. Louis, Mo. 63110.

Ophthalmology: Available July 1976. Board eligible. Presently on active duty. Wayne State University School of Medicine (1970). Residency at Sinai Hospital of Detroit. 31 years old. Write R.S.L., M.D.

Ophthalmology: Available July 1976. Board eligible. Internship at Greenwich Hospital; Residency at Wills Eye Hospital, Philadelphia. Completed military service. 30 years old. Richard L. Tax, M.D., N. 1605 Park Towne Place, Philadelphia, Pa. 19130.

Ophthalmology: Available immediately. Presently in practice. Wishes to relocate in Connecticut. 36 years old. Trained at Bronx Eye Infirmary. Solo or associate practice in larger city. Board eligible. David I. Wolf, M.D., 15 Vouga Lane, Frontenac, Missouri 63131.

Orthopedic Surgery: Board eligible. Prefers group or associate practice. Trained at Albany Medical Center and Upstate Medical Center in Syracuse. Available now. Robert M. Sheridan, M.D., 18 Pickwick Road, DeWitt, N.Y. 13214.

Orthopedics: Interested in Tolland or Litchfield Counties. Available August 1976. Board eligible. Presently in military service. Trained at Georgetown Medical School and Nassau County Medical Center, New York. Louis F. Candito, M.D., 632 Magnolia Street, New Llano, Louisiana 71461.

Orthopedic Surgery: Available July 1976. Completing training at Albert Einstein College of Medicine. Solo or group practice in medium sized community. 32 years old. Licensed in New York and Pennsylvania. Write K.I.M.

Pathology: Connecticut license. 31 years old. Presently available. Trained at Norwalk Hospital. N. Dah, M.D., 25 Balance Rock Road, Apt. 15, Seymour, Ct. 06483.

Pathology: Board certified (AP-CP). Available within 3 months notice. 37 years old. 3 years experience as instructor at Bowman Gray School of Medicine. Rafik M. Raphael, M.D., 3037 Cumberland Club Circle, N.W., Atlanta, Ga. 30339.

Pathology: Board eligible. Special interest in general pathology. Desires to return to Connecticut. Undergraduate work at University of Bridgeport. M.D. from State University of New York at Syracuse. 32 years old. Jeffrey J. Skovronsky, M.D., 10419 Fyfe Court, Fairfax, VA.

Pathology: Board certified. Anatomic Pathology. Available July 1976. Presently on active duty. M.D. from University of North Carolina. Completed fellowship at Sloan-Kettering Cancer Center. Edward B. Sussman, M.D., 215 Jupiter, Sheppard AFB, Texas 76311.

Pulmonary Medicine: Board eligible pulmonary internist experienced in fiberbronchoscopy completing Fellowship in January 1976. Desires association with small group or hospital staff position. Alan T. Levitt, M.D., 175 West 93rd Street, Apt. 8H, New York, N.Y. 10025. (212) 561-3701 or 663-4255.

Physician's Assistant: American foreign medical school graduate from University of Bern, Switzerland, seeking position as P.A. in New England. Connecticut resident.

Physician's Assistant: Certified. Completed program in March at Northeastern in Boston. 28 years old. Available immediately. Primary care desired. Jon H. Szydlo, Burlington Avenue, Collinsville, CT. 06022.

OPPORTUNITIES FOR PRACTICE

(If no name is listed, contact the Physician Placement Service for more details.)

Unlimited Opportunity for the following physicians: Internist, Cardiologist, Family Practitioner, Otolaryngologist, Urologist, Pediatrician. Free office space available for first 6 months, reasonable rent thereafter, in medical office building. New hospital in new location recently opened. Contact: William Stoppani, Administrator, Johnson Memorial Hospital, Stafford Springs, CT. (203) 684-4251.

Family Practice: Unusual opportunity, active practice, associate needed. Convenient location. Home and office space available. Call (203) 795-5801.

Family Practice: Associate or solo practitioners needed in two Middlesex County communities. One is located mid-county, the other a coastal community. Contact C.S.M.S. for details.

Emergency Room physician for 100-bed full service community hospital. Must be eligible for Connecticut licensure. Attractive salary, excellent benefits. Administrator, World War II Memorial Hospital, Meriden, CT. 06450.

Emergency Room Physician—Full time. 35,000 visits annually. Shore area, 10 miles from Medical School. Excellent starting salary and other benefits. Send Curriculum Vitae to Administrator, Milford Hospital, Milford, CT. 06460.

Internist/Cardiologist Wanted to direct 7-bed Intensive Care Unit and EKG Lab. Full-time position or private practice, with excellent salary and fringe benefits. In Connecticut, located 30 miles east of Hartford. New acute general hospital to be occupied in September. Great opportunity with tremendous growth potential, serving an area of 80,000 population. Contact M.A. Warpinski, M.D., Johnson Memorial Hospital, Stafford Springs, CT. (203) 684-4251.

Internists: Community in Central Connecticut seeks to attract two well qualified internists. Write CSMS-MT.

Internists: Multi-specialty Community Health Center needs staff physician. Contact Paul Harris, M.D., Director of Medical Services, Hill Health Center, 428 Columbus Avenue, New Haven, CT. 06519.

Internist or General Practitioner: Full time position. Geriatric care plus employees clinic. Contact CSMS.

Internist: Northeastern section of the state has several openings. Community hospitals have active search committees to attract primary care physicians.

Internal Medicine: Northwestern corner of the state in Litchfield County. Exellent opportunities. Physicians indicate willingness to assist with establishment of practice. Associate arrangements and/or coverage. Adequate referrals. Community hospitals conveniently located.

Internal Medicine: Three man group in search of fourth physician. Very active practice. Fairfield County area. Hospitals conveniently located. Contact CSMS for details.

Internal Medicine: New Haven Community Health Care Center now receiving resumes for physicians seeking staff positions for 1976. Paul H. Lavietes, M.D., Medical Director, 150 Sargent Drive, New Haven, CT. 06511.

Internal Medicine—(Oncologist): Needed for state hospital. Norman L. Cressy, M.D., Uncas-on-Thames, Norwich, CT.

Internal Medicine—(Oncologist): Some general medicine until subspecialty practice is developed. Contact Michael R. Sharon, M.D., 57 Union Street, Rockville, CT.

Pediatrics: Public Health Medical Consultant for Maternal and Child Health and Crippled Children programs. Contact J.J. Crowly, Personnel Administrator, Connecticut State Department of Health, 79 Elm Street, Hartford, CT. 06115.

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Leonard R. Tomat
Assistant Executive Director
Scientific Activities

CALL
SEMI-ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1975 Semi-Annual Meeting of the House of Delegates will be held at the Sheraton Park Plaza Hotel, New Haven, commencing at 9:00 A.M. on Wednesday, November 19.

Guy W. Van Syckle, President
Timothy F. Nolan, Speaker of the House
Louis C. Backhus, Secretary

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society Provides:

Resolutions may be introduced by any Active or Life Member of The Society, in compliance with the following provisions.

a. *All resolutions, reports and similar items of business submitted in writing and received at the office of the Executive Director not later than thirty days before the date scheduled for that meeting shall be considered as regular business of the House of Delegates.*

b. *Component county associations whose meetings are held later than thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meeting in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc. be considered regular business if they are received later than fifteen days prior to the date of the meeting.*

c. *Reports, recommendations, resolutions or other new business may be presented to the House of Delegates by the Council of The Society at any time and shall be considered as regular business.*

d. *Any business which does not qualify as regular business in accordance with the foregoing provisions may be accepted for consideration by a majority vote of the delegates present and shall be referred at once by the Speaker to a reference committee. When business is introduced under the provision of this paragraph the vote shall be taken without debate, except that the introducer shall be allowed not more than two minutes to explain why it should be considered as regular business.*

Summary of Actions

Council Meeting

Thursday, August 21, 1975

I. Attendance

Present in addition to the Chairman, Dr. D. A. Grendon, and the Vice Chairman, Dr. J. K. Freedman, were: Drs. VanSyckle, Friedberg, Backhus, Root, Jr., Hess, Fabro, Granoff, Jamens, Ragland, Jr., James, Krinsky, Beck, Canzonetti, Robinson, Harkins and Eslami.

Also present: Mrs. Lindquist; Dean Massey, UConn Medical School; Mr. Tomat; Mr. Sullivan (AMA); and Dr. Richards.

Absent were: Drs. Spitz, Johnson, Nolan, Gardner, Bradley, Cramer, Rubinow, Sonnen, Klare, McGarry, Magram, Mendillo, Barrett, Dambeck and Bird.

II. Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of July 16, 1975 with inclusion of an amendment as follows: Under "Report—Meeting on Health Education in Schools," Page 4, the final sentence is to read: "The report also indicated that the Connecticut Advisory Council on School Health will pursue the matter and draft an appropriate bill for CSMS to introduce at the General Assembly."

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

Philip Berwick, Plains Road, Moodus
Hyman B. Birnbaum, 826 Boston Post Road, Madison

Louis F. Castaldo, 325 Reef Road, Fairfield
Edward M. Cohart, 60 College Street, New Haven
G. deSuto-Nagy, V.A. Hospital, West Haven
Eric Gordon, P.O. Box 467, Middletown
Daniel Hardenbergh, 101 Harbor Road, Southport
William H. Horton, 125 Falcon Road, Guilford
Leizor Kessel, State Veterans Hospital, Rocky Hill
Royal A. Meyers, 210 Guernseytown Road, Watertown
Thomas J. Mirabile, 59 Burnside Avenue, East Hartford

Date of Next Meeting

The Chairman set the date for the next meeting of the Council as Wednesday, September 17, 1975.

III. Old, New and Special Business

Resignations, Appointments, Etc.

Editorial Committee of Connecticut Medicine: It was VOTED to accept, with regret, the resignation of John C. Wright, Manchester, as a member of the Committee. It was further VOTED to appoint to membership on the Committee the following: Thomas J. Krizek, New Haven.

Reports—Judicial Committee

Held over for action from the meeting of July 16, 1975 were reports received from the Committee which requested Council approval of two Committee opinions on subjects as follows: (a) Jurisdiction of a County Medical Association Over Its Members; (b) Policy on Required Prepayment for Medical Services.

(a) It was VOTED to approve the Committee's opinion re the jurisdiction of a County Medical Association over its members, as amended, as follows:

"It is the opinion of the Judicial Committee that the County Medical Association of which the physician is a member has jurisdiction over the member. This reaffirms the opinion stated by the Council on July 17, 1974. Further, it is the opinion of the Judicial Committee that if a County Medical Association receives a complaint about a physician practicing in that county who is a member of another component County Medical Association, the Association receiving the complaint should direct the complaint to the officers of the Association in which the physician maintains his membership. Within forty-five (45) days, the member's Association should inform the referring Association of the manner in which the complaint has been handled and of the action taken thereon. In the event that, after expiration of the prescribed forty-five (45) day period, such information has not been received by the referring Association, that Association may request the Judicial Committee of the Connecticut State Medical Society to make an investigation of the situation. Upon receipt of such request, the Judicial Committee should contact the member's County Medical Association and ask for a report on how the complaint has been handled and of the action taken thereon. If, after thirty (30) days, the Judicial Committee has not received the report requested, the Judicial Committee will assume responsibility for investigating the complaint originally received by the component County Medical Association of which the physician is not a member."

A copy of this opinion is to be sent to the President and/or Secretary of each component County Association.

(b) Several motions to amend, and a motion to approve, the opinion of the Judicial Committee re a policy on required prepayment for medical services were lost.

Patient Education—Report of Committee on Statewide Medical Planning

It was VOTED to remove from the table two motions, tabled at the meeting of 6/12/75, which proposed implementation of the subject report (on patient education) of the Committee on Statewide Medical Planning. In part, the tabling action of 6/12 was for the purpose of enabling the Council to consider the motions in light of an AMA Board of Trustees' report (F) on patient education to be made to the AMA House of Delegates, Atlantic City, 6/14-19/75. Copies of Report F on the AMA Board were furnished to the members of the Council.

Following an extended period of discussion, it was VOTED to act on the two motions which had been removed from the table as follows:

(a) To approve a recommendation of the Committee on Statewide Medical Planning, as amended, as follows: "That the Council direct that a letter, with an accompanying copy of the subject Report F of the AMA Board of Trustees, be sent to the Chief of Staff of each community hospital in Connecticut in order to determine how closely to the patient education program recommended by the AMA (in AMA Trustees' Report F) each such community hospital is functioning.

(b) To defer action on the second motion (which called for the CSMS membership to receive educational materials re "patient education") until the community hospital replies to (a) have been received, reviewed and analyzed.

Revised Statement on Health Insurance—Committee on Third Party Payments

It was VOTED to accept for filing the draft of a revised statement on health insurance, prepared and submitted by the Committee on Third Party Payments. It was further VOTED to approve, with minor amendment, the draft statement as submitted (minus the last two pages which listed the extent of public and professional participation in the CMS Century Contracts) and to return the document to the Committee (as requested by the Committee) for the formulation and submission to the Council of recommendations for its use and possible publication as an abridged, short pamphlet. Finally, it was VOTED to ask the Committee to consider inclusion in the statement of a commentary on foundation-type health insurance.

Invitation to Governor Grasso to Speak at 1976 Annual Meeting

At the suggestion of the President, Guy W. VanSyckle, the Council VOTED to extend an invitation to Governor Grasso to speak at the 1976 annual meeting of the Society.

Report of Ad Hoc Committee on Council Procedure

It was VOTED to accept for filing, and to approve, a subject report submitted by the Ad Hoc Committee. In brief, the report advocated changes in the preparation of Council agendas (conditions for acceptance of items of business for Council consideration, enlargement of "screening committee" and more precise definition of duties, etc.) and stricter observance of parliamentary procedure in the conduct of Council meetings, including standing rules for discussions and discussants.

Resolution—Greenwich Medical Society, Inc.

It was VOTED to accept for filing a resolution submitted by the Greenwich Medical Society which contended that, in smaller communities, there is no retail pharmacy service available at night. Further, the resolution suggests that a hospital emergency room—being open twenty-four hours a day—could dispense medication to non-hospital patients of physicians having staff appointments at the hospital were if not for the fact that existing statutes covering pharmacy prohibit either hospital pharmacies or hospital emergency rooms from dispensing to persons who are not inpatients, outpatients, hospital employees or members of the hospital's professional staff. The resolution concluded by asking that the Connecticut State Medical Society seek legislative action by the Connecticut General Assembly which would legalize the filling of prescriptions— including telephoned (oral) prescriptions—by hospital emergency rooms during the hours when all local (retail) pharmacies are closed, with the proviso that medications so dispensed would be limited to a maximum of four doses and that the prescribing physician have staff privileges at the hospital concerned. Although the resolution, as such, was not adopted, the Council VOTED to refer "the matter" (subject problem and proposal) raised in the resolution to the Liaison Committee with the Connecticut Pharmaceutical Association for study and report to the Council within three months.

Fourth Annual Report—CSMS-Aetna Professional Liability Insurance Plan

It was VOTED to receive as information copies of the subject report which had been prepared by the Aetna Life and Casualty Co. and reviewed at length on 8/14/75 by the CSMS Committee on Professional Liability. In addition to statistical material on experience with the plan from 10/1/71 to date, the report advised that Aetna would enter into an agreement with the Society to guarantee renewability of coverage for CSMS members for a second five-year period (10/1/76-9/30/81) and that an average, across-the-board increase in annual premium of about 40% would become effective for enrolled members on 10/1/75. After lengthy and detailed review of the report, the Council VOTED to approve a recommendation of the Committee on Professional Liability "that the report be accepted and that the Society renew its endorsement of the CSMS-Aetna Professional Liability Insurance Plan for another five-year period—1976-81."

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on August 21, 1975. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

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Mrs. Raymond Bopp, Windham

Treasurer
Mrs. Patrick Concannon, Middlesex

AMA Auxiliary Elects Connecticut's Mrs. Norman H. Gardner National President-Elect

Mrs. Norman H. Gardner

The highlight of the 1975 American Medical Association's Convention in Atlantic City, for the Connecticut auxiliary's delegation, was the election and installation of Mrs. Norman H. (Betty) Gardner, past president of the Woman's Auxiliary to the Connecticut State Medical Society, as 1975-1976 president-elect of the AMA Auxiliary. Mrs. Gardner, wife of Dr. Norman H. Gardner of East Hampton, has been active locally as an auxiliary board member since 1951, becoming president of the Middlesex County auxiliary in 1959. In 1962 she became Connecticut's auxiliary president, and in 1963 Mrs. Gardner went on to become the program chairman on the national level. Since then she has successfully held various national positions, leading to her having been nominated for this high position in the AMA Auxiliary. No other Connecticut auxiliary member has ever attained this office, and only one other New England auxilian has ever been national president-elect, followed by a presidential year, since the auxiliary's inception in 1922.

Two membership awards were presented to our Connecticut auxiliary at the national convention. Dr. Guy Van Syckle, president of the Connecticut State Medical Society, was invited by Mrs. Mehdi Eslami, first vice president and membership chairman of the Connecticut auxiliary, to join her in receiving the awards for the greatest percentage of increase of members in the Eastern Region and for the greatest percentage of increase in the number of members-at-large in the Eastern Region.

Convention business included a change of name to American Medical Association Auxiliary in keeping with the policy of accepting both husbands and wives of physicians as members. In addition, the auxiliary house of delegates voted a three-dollar increase in dues, bringing national dues from $4 to $7. and changed their bylaws to meet current demands of economy and programming.

This year's American Medical Association-Education and Research Foundation (AMA-ERF) contribution from the auxiliary was $1,361,564.21, more than a $150,000 increase over last year. Dr. John Budd, vice president of AMA-ERF thanked the auxiliary. "Your continuing record-breaking contributions to AMA-ERF are not only noteworthy," he said, "they are remarkable."

Out-going president, Mrs. Howard Liljestrand, said that all institutions should "expect change and be prepared to adjust to it." Mrs. Erle E. Wilkinson, in-coming president, called for unity of goals and purpose "so that we can get it all together."

New Haven County auxiliary's lecture series entitled, "You Have The Right To Know," concerning current medical legislation and an in-depth analysis of the major problems facing physicians, was presented at the 1975-76 Idea Exchange as an outstanding program from Connecticut by Mrs. George Roch, Connecticut's president. At the convention Mrs. Roch was appointed the Eastern Region's member on the Long Range Planning Committee.

Other Connecticut participants who attended the recent convention were as follows: Mrs. Mehadin K. Arafeh, Mrs. Francis Bruno, Mrs. Joseph Czarsty, Mrs. Harold Knight, Jr., Mrs. F. Erwin Tracy, and Mrs. Michael Wirth.

Mrs. Mehadin K. Arafeh, *President-elect*

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INDEX TO ADVERTISERS

Aetna Life & Casualty ... 642
Ambulance Air, Inc. ... 678
Boehringer Ingelheim, Ltd. ... IFC
Burroughs Wellcome Co. ... 636
Classified Advertising ... 680
Connecticut Blue Cross ... 645
David Dean Smith ... 630
Dentocain Co. ... 656
Arthur W. Eade, Insurance ... 674
Elmcrest Psychiatric Institute ... 640
Geigy Pharmaceuticals ... bet. 648 & 649
Geriatric Pharmaceutical Corp. ... 635, 646
Kenwood Laboratories ... 652, 678
Eli Lilly & Co. ... FC
Eleanor C. Mayer, Realtor ... 629
Merck, Sharp & Dohme ... bet. 656 & 657
Merrill Lynch, Pierce, Fenner & Smith, Inc. ... 4
Pharmaceutical Manufacturers
  Assoc. ... bet. 624 & 625
Physicians Planning Service Corp. ... 680
Robins, Co., A.H. ... bet. 640 & 641, 641
Roche Laboratories ... 2 & 3, 670, 671, IBC, BC
Roerig & Co. ... bet. 624 & 625
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Yovan & Desmond ... 629

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Connecticut Medicine

The Journal of the Connecticut State Medical Society

VOLUME 39, NOVEMBER 1975, NUMBER 11

Peter H. Wiernik **Management of the Acute Leukemia Patient** 681
George W. Hicks **Acute Trauma of the Larynx** 686
Morris D. Kerstein, Howard Zimmer, and Frederick E. Dugdale **Rigid Dressings: Poor Results** 690
Mark Dubay and Mark Izard **Hemodialysis in Anephric Patient in Hepatic Coma** 692
Lawrence H. Einhorn **Evaluation and Treatment of Hodgkin's Disease in the 70's** 694
New England Pediatric Society:
Leon Chameides, Frank Galioto and Donald C. Fyler **Regional Infant Cardiac Program** 707
Robert H. McLean **Serum Complement in Glomerulonephritis** 711
Arnold J. Altman **Management of the Child with Cancer** 715

Philip Felig **Oral Hypoglycemic Agents** 704
Henry R. Mandel **Connecticut and its Cancer Center** 721
James G. Zimmerly and Edward R. White **PSROs—Their Meaning to the Lawyer** 725
Lance Tibbles **Is He Dead? Should He Be Allowed to Die? Who Decides?** 731
AMA Council on Medical Service **Medical Staff—Hospital Relations** 736
AMA Council on Medical Education and Medical Services **Full-Time Program Directors and Chiefs of Service** 741
Editorials: Robert M. Greenstein and Milton Markowitz **Pediatric Graduate Education and Care** 701
Herbert S. Sacks **PSRO and the Privacy Act** 702
Fred Fabro **AMA Dues** 703
Letters to the Editor: Bernard O. Nemoitin **Physician-Pharmacist Relationships** 706
Sister Mary Anne Fitzmaurice, Urabagilu Nagaraja **Rural Maternity Departments** 706

Table of Contents: page 1

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Connecticut Medicine

NOVEMBER, 1975
Vol. 39/No. 11

CONTENTS

scientific:

Management of the Acute Leukemia Patient, *Peter H. Wiernik, M.D.* 681
Acute Trauma of the Larynx, *George P. Hicks, M.D.* 686
Rigid Dressings: Poor Results, *Morris D. Kerstein, M.D., Howard Zimmer, M.A., and Frederick E. Dugdale, M.D.* 690
An Anephric Patient In Hepatic Coma: A New Role for Hemodialysis, *Mark Dubay, M.D. and Mark Izard, M.D.* 692
Evaluation and Treatment of Hodgkin's Disease in the 70's, *Lawrence H. Einhorn, M.D.* 694

editorials:

Partnerships in Pediatric Graduate Education and Child Care..... 701
PSRO and the Privacy Act: Progress in Confidentiality Guarantees 702
AMA Dues 703

departments:

The President's Page 699
Reflections from the Dean's Office 700
Letters to the Editor:
  Bernard O. Nemoitin, M.D 706
  Sister Mary Anne Fitzmaurice 706
  Urabagilu Nagaraja, M.D. 706
From the Executive Director's Office 747
Physician Placement Service 755

special articles:

Oral Hypoglycemic Agents, Statement before Subcommittee on Monopoly, *Philip Felig, M.D.* 704
The Regional Infant Cardiac Program, *Leon Chameides, M.D., Frank Galioto, M.D. and Donald C. Fyler, M.D* 707
Serum Complement in the Evaluation of Glomerulonephritis, *Robert H. McLean, M.D* 711
Management of the Child with Cancer, *Arnold J. Altman, M.D.* 715
Connecticut and its Cancer Center Regional Activities, *Henry R. Mandel* 721
Professional Standards Review Organizations (PSROs)—What Do They Mean To The Lawyer? *James G. Zimmerly, M.D., J.D., M.P.H. and Edward R. White, M.D., J.D* 725
Is He Dead? Should He Be Allowed to Die? Who Decides? *Lance Tibbles, J.D.* 731
Report of the Council on Medical Service of the AMA, Medical Staff—Hospital Relations 736
Joint Report of the Council on Medical Educations and the Council on Medical Service of the AMA, Full-Time Program Directors and Chiefs of Service 741

miscellaneous:

Notices 705, 746
Obituary:
  George E. Roch, M.D 750
In Memoriam 751

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Management of the Acute Leukemia Patient

Peter H. Wiernik, M.D.

Introduction

I will first discuss problems that need immediate attention in patients with acute leukemia. There will then be a presentation of unusual and interesting clinical features of these diseases followed by comments on prognosis. Results of current therapy will be discussed and the paper will close with comments on granulocyte transfusion and the prevention and treatment of infectious complications in patients with acute leukemia.

Problems Requiring Immediate Attention

Freireich and colleagues[1] observed that patients with acute nonlymphocytic leukemia (ANLL) who had greatly elevated WBC often suddenly and unexpectedly died. Autopsy in these patients revealed intracranial hemorrhage. The bleeding was not subarachnoid or subdural as is common in thrombocytopenia, but intracerebral. They defined the pathologic lesion as one resulting from leukostasis in the cerebral microvasculature with subsequent rupture of the vessel. The poor prognosis for immediate survival noted in ANLL patients with greatly elevated WBC is probably due in large part to intracerebral leukostasis. At the BCRC, ANLL patients with initial WBC $>$150,000 are treated with 600 R radiotherapy to the entire cranium beginning immediately upon admission to resolve foci of intracerebral leukostasis, and we administer hydroxyurea 3.0 gm/M^2 at the same time to quickly lower the WBC so that the opportunity for reestablishment of such intracerebral foci will be minimal. We then proceed to more definitive antileukemic therapy.

Since we have been utilizing this kind of emergency therapy, the influence of the initial WBC on ultimate survival in ANLL has been minimized and the same is true for the percentage of blast cells in the peripheral blood at the time of diagnosis.[2] Presenting WBC is of importance in childhood acute lymphocytic leukemia (ALL) also. Patients who are leukopenic at the time of diagnosis ultimately fare better than those who present with normal WBC. ALL patients with a leukocytosis have the poorest prognosis. Remission duration and ultimate survival are adversely affected by leukocytosis in ALL even though most patients achieve a complete remission irrespective of presenting WBC. Thus, severe leukocytosis in ANLL adversely effects immediate survival if emergency measures are not taken, and leukocytosis in ALL adversely effects long term prognosis. It is not clear why leukocytosis in ALL impairs remission duration and survival, but the higher incidence of meningeal leukemia in patients with ALL who present with high WBC may be part of the answer.[3]

Platelet transfusion employed prophylactically in the management of patients with leukemia with platelet counts $<$ 20,000 whether or not they are bleeding has irradicated the poor prognostic significance of thrombocytopenia on admission.[4] In an effort to minimize the development of resistance to random donor platelet transfusions, a number of investigators have employed HLA compatible platelets whenever possible.[5] The feasibility of freezing and storing platelets from leukemia patients in complete remission for use during subsequent relapse is under investigation at the BCRC.[6]

Ecchymotic bleeding and bleeding from needle puncture sites, etc. is occasionally seen in patients with acute leukemia at the time of diagnosis. This is not the kind of bleeding one would expect with thrombocytopenia. Thrombocytopenia facilitates capillary bleeding and usually results in petechial hemorrhage. The sort of hemorrhage alluded to here is due to a decrease in clotting factor concentration secondary to disseminated intravascular coagulation. While this syndrome has been noted in all cell subgroups of acute leukemia, it is most common in acute promyelocytic leukemia. Acute promyelocytic leukemia patients whose leukemic cells contain bizarre, splinter-shaped granules as demonstrated by electron microscopy[7] seem to have the most difficulty with this hemorrhagic diathesis. Any acute leukemia patient with bleeding disproportionate to his platelet count should have a clotting profile done, including fibrinogen, fibrin split products, prothrombin time and PTT. It is important to diagnose this problem early because it is life-threatening and usually amenable to therapy. This bleeding problem is probably initiated by release of tissue thromboplastic activity from the leukemic cells with subsequent activation of the extrinsic clotting system.[8] Extrinsic clotting system activation is usually not associated with shock because activation of the bradykinin and complement systems does not occur as it does with activation of the intrinsic clotting system.

Dr. Peter H. Wiernik, Head, Section of Medical Oncology, NCI, Baltimore Cancer Research Center, and Associate Professor of Medicine, University of Maryland School of Medicine, Baltimore, MD.

This paper was part of the "University of Connecticut Health Center Medical Oncology Lecture Series supported by the Connecticut Division of the American Cancer Society." Address reprint requests to: Peter H. Wiernik, M.D., 22 S. Greene Street, Baltimore, MD. 21201.

Therefore leukemia patients with DIC stand an excellent chance of recovery when treated with heparin.[9] Low dose heparin therapy, 50 to 70 units/kg given q.6.h., will usually result in significant improvement in 24-48 hours.

An unusual problem that occurs in childhood acute lymphocytic leukemia, gross mediastinal enlargement, can lead to respiratory distress if not recognized and treated appropriately. Such patients may require mediastinal irradiation and/or immediate therapy with a rapidly acting drug such as cyclophosphamide to prevent or relieve respiratory embarrassment.

Gingival hypertrophy in acute leukemia is seen most often in patients with acute myelomonocytic (AMML) or acute monocytic leukemia (AMOL). It is rarely, if ever, seen in ALL. The gingival hypertrophy in this disease is due to infiltrating leukemia cells. In Dilantin hypersensitivity, the gingival hypertrophy is due to the laying down of fibrous tissue. Gingival hypertrophy *per se* rarely requires specific therapy because it will resolve quickly with systemic therapy. However, vigorous oral hygiene is necessary to prevent local infection. Leukemic skin infiltration occurs in perhaps 10% of acute leukemia patients. The lesions are typically nodular and a few mm. to a cm. or more in diameter and appear either pink or bluish when they are deeper in the skin. This complication is also more common in AMML and AMOL than in other varieties of acute leukemia. No specific therapy is indicated unless the lesions are disfiguring in which case local irradiation may be very helpful. It is interesting that the highest incidence of soft tissue leukemic infiltration occurs in patients whose leukemia has a monocytic component. Such patients are also most likely to mobilize leukemic cells into a Rebuck skin window.[10]

Fundoscopic examination may reveal hemorrhage in the patient with acute leukemia. The classical hemorrhage with a white center is often observed. The white center represents an infarct secondary to plugging of small vessels with leukemic cells, and the hemorrhage results. Chloromas or granulocytic sarcomas[11] are usually harmless. They can on occasion produce local symptoms such as pain or even blindness. They usually readily respond to X-ray therapy and they always occur in patients with ANLL, although when originally described, they were thought to occur in ALL.[12]

Signs and symptoms of increased intracranial pressure may develop during hematologic remission in any acute leukemia.[13] Lumbar puncture will usually reveal the diagnosis to be meningeal leukemia. Sometimes the CSF cell count is normal and yet the cytocentrifuge[14] will show numerous leukemic cells. Meningeal leukemia occurs in approximately 50% of long term survivors with ALL who have not had prophylactic meningeal leukemia treatment. As more and more patients with ANLL survive long periods of time, the incidence of meningeal leukemia in those patients is increasing steadily.[15] Presently at the BCRC we see meningeal leukemia in about 15% of patients with ANLL who have survived one year or more.

Prognostic Features

Auer rods were first described in patients who were thought to have ALL[16] but are now known to occur only in patients with ANLL. They have been demonstrated by electron micrographic studies to be large, bizarre, lysosomes.[17] They are said to confer a good prognosis by some and not to influence prognosis by others. In our experience, Auer rods are usually found in younger patients, and we feel that it is the younger age rather than the presence of Auer rods that favorably influences prognosis. Advancing age clearly adversely affects survival in ANLL.[18] It should be noted, however, that this is not universally true and many patients aged 60 years or more enjoy long disease free survival. Immunocompetence in a patient with acute leukemia has been shown by Hersh[19] and coworkers to favorably effect prognosis. Anergic patients who regain normal delayed hypersensitivity as a consequence of therapy appear to have a better prognosis than those who do not. Infants and adults with ALL have a poorer prognosis than do children.

Therapy

The combination of vincristine and prednisone is standard for remission induction in ALL and it is difficult to improve on the rate of remission obtained with that combination (80-90% for children, 50-60% for adults). There are conflicting reports about the efficacy of adding daunorubicin to that combination and most workers now feel that little is gained by it. Prior to induction therapy in any patient with acute leukemia, serum uric acid should be brought well within the normal range by the administration of allopurinol and urine alkalinizers. In order to prevent urate nephropathy secondary to the production of a large uric acid load by a raid anti-leukemic response, patients should receive allopurinol 100-200 mg. or more t.i.d. for 24-48 hours prior to the administration of chemotherapeutic agents whenever possible. Patients who present with urate nephropathy may require renal dialysis.

Two animal tumor systems when considered together—the Walker 256 and the P1798 systems predicted that prednisone and vincristine would be effective as remission inducers in childhood ALL. The L1210 mouse leukemia model predicted that methotrexate would be useful as a maintenance agent in childhood ALL, and this is in fact the case.[20] Animal systems may be useful in predicting not only the activity of various drugs, but the relative merits of different schedules of administration of the same drug. In the L1210 system, biweekly injections or methotrexate were associated with a longer median survival than were daily injections. When this finding was examined in the clinic[21] a similar result was obtained.

The great therapeutic progress in childhood ALL has resulted from the stepwise application of new concepts to standard therapy. The median survival of patients entered in sequential studies has steadily improved. Earlier studies employed single agent induction and maintenance therapy. Later, combination therapy for induction was used and intensive maintenance therapy was employed. Courses of re-induction therapy for occult disease were subsequently added to remission maintenance regimens, and the best current results demonstrate the impact that prophylactic therapy for meningeal leukemia has had on survival in this disease.

The optimal prophylactic therapy for meningeal leukemia is under active investigation. Most workers have used a combination of cranial irradiation and intra-thecal methotrexate given when hematologic remission is achieved, provided there is no evidence of meningeal leukemia. It is not clear that this combined modality approach is necessary, however, and there is data to suggest that intrathecal chemotherapy alone may be sufficient.[22]

There are a number of drugs effective in the therapy of ANLL. Daunorubicin and cytosine arabinoside are the drugs with the greatest single agent activity.[23] [24] To date, the best complete remission rates have been obtained with the use of these 2 drugs in combination.[25]

The L1210 mouse model predicted that DNR would be an effective drug in ANLL, and that the combination of cytosine arabinoside and thioguanine would be synergistic. Clarkson[26] has data that suggests that such synergism is seen in clinic. Table 1 depicts a recently completed large group study of treatment with ANLL. Patients are randomized to one of three treatments: daunorubicin, a combination of cytosine arabinoside and thioguanine, or to a combination of all three agents. The results of this study[27] indicate an advantage for the 3 drugs over the other 2 treatment options, but not a statistically significant one. It is very difficult to demonstrate that maintenance therapy is efficacious in ANLL. It is clear that it is of utmost importance in children with ALL. There is new data to strongly suggest, however, that *intensive* maintenance therapy may also be of benefit to patients with ANLL[28] and still newer data that indicates a role for immunotherapy in prolonging remission in ANLL.[29]

Table 1

ACUTE LEUKEMIA GROUP B STUDY #7221 FOR THE TREATMENT OF ACUTE NONLYMPHOCYTIC LEUKEMIA

		Induction Therapy	
	DNR	*ARA-C + TG*	*DNR + ARA-C + TG*
Entered	171	176	176
Evaluable	144	161	155
Complete Remission	61 (42%)	71 (44%)	77 (50%)
Partial Remission	9 (7%)	12 (8%)	11 (7%)

Very little progress has been made in increasing the median survival of patients with ANLL. However, in a recent BCRC study, the median survival of all treated patients was greater than 6 months, and it approached 1 year in the best treatment group.[30] It is clear that patients with ANLL who achieve complete remission have improved survival. The median duration of survival of patients who achieved complete remission in the BCRC study was approximately 14 months.[30]

Supportive Care

The supportive care of patients with acute leukemia is as important as specific anti-leukemic therapy. There is evidence from several centers that granulocytes obtained for transfusions by either centrifugation[31] or filtration[32] have been useful in certain infected granulocytopenic patients with acute leukemia.

Most physicians recognize that infection is one of the major complications for patients with acute leukemia. Nearly 70% of adult patients will ultimately die of infection, but of considerably more importance is the observation that about 25% of patients will die of infection before they have had an adequate trial of anti-leukemic therapy. It is not yet sufficiently recognized how frequent these infections can be effectively prevented or treated. Pneumonia[33] is the single most frequent site of infection. Early in the patient's course, most pneumonias are caused by gram negative organisms, particularly *Pseudomonas aeruginosa.* In the patient who has been hospitalized for a prolonged period of time, has already had various infections and has been treated with antibiotic therapy, the likelihood is high that a new pneumonia will be caused by *Candida* or *Aspergillus.* It is very important to recognize that fever in a granulocytopenic patient who is not coughing and who is not producing sputum and who has a negative physical examination may still represent the presence of pneumonia and chest x-rays, repeated daily, are essential. Presently most pneumonias are diagnosed too late and most patients die.

The second most common site of infection and perhaps the most common cause of septicemia is perianal and perirectal infection.[34] These infections occur principally in patients with AMOL and AMML. Septicemia from these sites at the BCRC has been secondary to *Pseudomonas aeruginosa* in more than half of the cases.

Other common sites of infection are pharyngitis, various skin infections, particularly axillary cellulitis due to gram negative bacilli, urinary tract infections which, interestingly enough, rarely produce a septicemia, and viral hepatitis related to blood product transfusions.

Pseudomonas aeruginosa is not only the most frequent cause of infection, but is the most frequent cause of septicemia and of infectious death. Many of the organisms which cause infection in these patients, particularly *Pseudomonas aeruginosa* and *Staphylococcus aureus*, are clearly acquired during the patient's hospitalization. Most leukemia patients who are granulocytopenic and who become colonized with *Pseudomonas aeruginosa* will develop a pseudomonas infection. Unfortunately, it is just this type of infection which often occurs early in the patient's course, causing death before the patient has had an adequate trial of therapy. It is, therefore, essential that various preventive techniques be used to reduce patient acquisition of organisms such as *Pseudomonas*, and that very early and intensive antibiotic therapy be instituted at the first sign of infection.[35] Once the granulocyte is $<$ 1000, the incidence and severity of infection is extremely high[36] and it is to be remembered that antileukemic drug therapy generally produces a prolonged period of severe granulocytopenia.

It has been emphasized that certain types of infections, particularly the gram negative bacillary infections, are likely to occur early in the patient's hospital course. Fig. 1 shows the temperature chart of a patient who had been hospitalized for 11 days with ANLL who suddenly developed a temperature of 100.6° following a platelet transfusion. Examination and history were negative and cultures were obtained. His temperature promptly returned toward normal and antibiotics were withheld. However, during the early morning hours, his temperature again rose. The patient was re-examined and found not to have an infectious lesion. He was recultured and begun on empiric antibiotic therapy with carbenicillin, gentamicin and cephalothin, but he soon developed septic shock and died. The infecting organism was *Pseudomonas aeruginosa,* which he had acquired following admission to the hospital. The patient's WBC count was 500/mm^3 and the granulocyte level was $<$ 100/mm^3. This tale is related to you to emphasize first, the short time course between the very first evidence of infection, in this case fever, and the patient's ultimate demise if not treated very early with empiric antibiotic therapy. Also to be pointed out is that this patient had no evidence of a specific site of infection when first examined the previous afternoon.

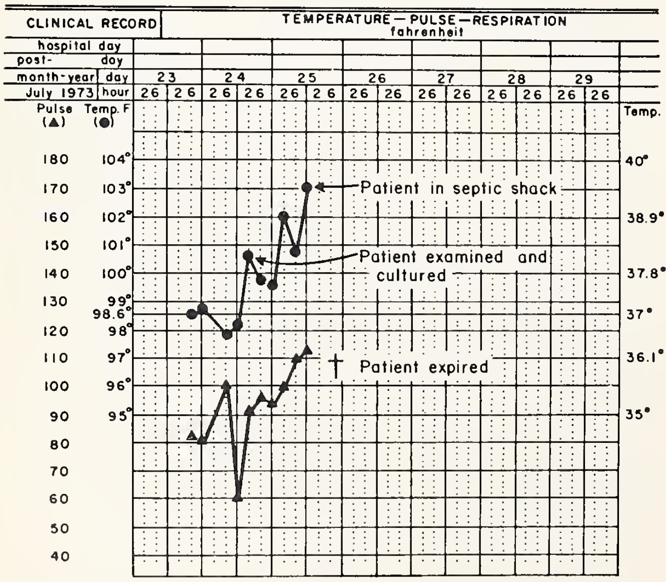

Figure 1

Although some of the newer antibiotics if given empirically at the first evidence of infection will indeed reduce the incidence of infectious death, there is no question that many patients still do die of infection and many more survive only with prolonged periods of morbidity. For these reasons, it is obvious that infection prevention is essential. In recent years various forms of reverse isolation in Life Islands or Laminar Air Flow Rooms[37] have been used in an attempt to prevent the acquisition of pathogens by leukemia patients with an aim toward reducing the incidence of infection. Many such programs have also incorporated oral, non-absorbable antibiotics to reduce the patient's endogenous flora. In the last 2 to 3 years, the results of a number of controlled trials have become available. Levine and colleagues[38] have shown a distinct reduction of all types in patients treated with the oral, non-absorbable antibiotics in Laminar Air Flow Rooms. However, they did not note an increase in the remission rate or in survival. Bodey, et al.[39] have also observed a reduction in infection in a retrospectively controlled trial. Yates and Holland[40] have found a reduction in infection in patients isolated, in patients treated with the oral, non-absorbable antibiotics, or in patients isolated and also receiving the antibiotic combinations. At our center[37] we have seen a marked reduction in infections in the patients who are in the Laminar Air Flow Rooms receiving oral antibiotics or in patients not isolated, but receiving the same antibiotics. We have also seen an increase in the complete remission rate in both those groups compared to a ward control group. The results of these various investigations strongly suggest that strict isolation, gut decontamination or the combination of both will indeed markedly reduce the infection rate and possibly allow an increased number of patients to live at least a sufficient time to receive an adequate trial of antileukemic chemotherapy.

With new promising antileukemic drugs and with improved supportive care as described above, grounds for real optimism for long term control of acute leukemia exist.

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Acute Trauma of the Larynx

George W. Hicks, M.D.

Abstract—Acute laryngeal trauma is often present with high speed travel and altercations of a violent nature. Early diagnosis is often delayed because of the insidious onset of symptoms and a lack of familiarity with the problem. Early recognition of laryngeal injury by the initial examiner is of absolute necessity. A review of the pathogenesis, signs and symptoms, and treatment of acute laryngeal injuries is presented so that this potentially lethal problem may be recognized.

Introduction

Injuries to the larynx present special problems in diagnosis and treatment. Early recognition of such an injury may not only present a severely debilitating condition, but may very well be the "life-saving" diagnosis. Laryngeal injuries have occurred as a result of automobile, minibike, water skiing, snowmobile, and other vehicular type accidents as well as the more obvious weapon-inflicted wounds. It has long been apparent that the primary etiology of acute trauma to the larynx is the automobile accident.[1] [2] [3] Eighty per cent of people involved in automobile accidents have at least one injury to the head and neck region, and eight per cent of the injuries are in the neck. Airway problems are second only to intracranial injuries as a cause of death.

Ordinarily, protection is afforded to the larynx by anatomical factors—namely, the mandible, the cervical spine, and its own suspension (Figs. 1, 2). When an automobile suddenly decelerates and comes to a stop, as in a head-on collision, the passenger is thrust forward, the mandible is raised, and the larynx strikes a fixed object and is crushed between the object and the cervical spine, which now acts like an anvil (Fig. 3). Surprisingly, there is not always an immediate airway obstruction. On the contrary, people suffering such an injury may be initially free of attention-arousing symptoms in the neck. Often other injuries of a less serious nature are being attended, e.g., scalp lacerations, extremity fractures, while the airway insult is surreptitiously exerting its potentially lethal consequence. It is to those signs and symptoms of such an injury that we must alert ourselves.

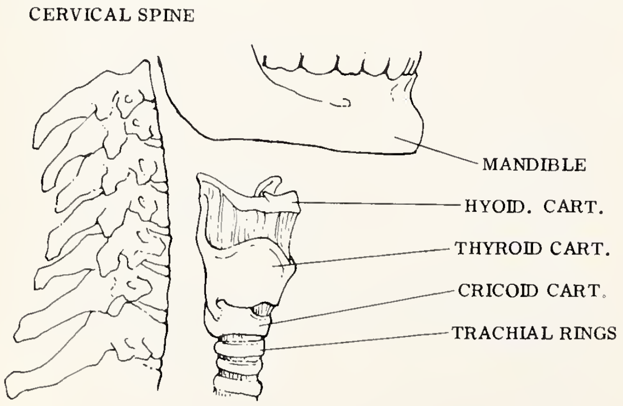

Figure 1
Lateral diagrammatic view of cervical spine, mandible, and laryngeal structures.

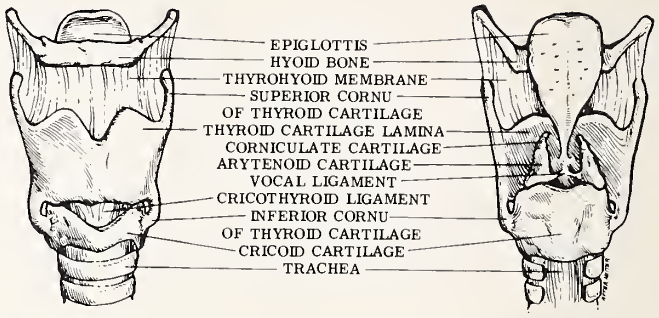

Figure 2
Frontal view of laryngeal structures.

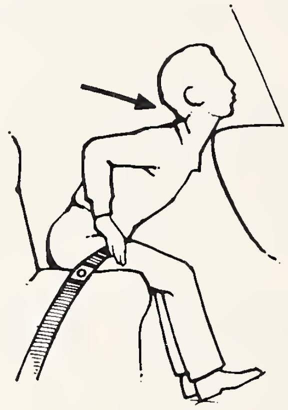

Figure 3
Diagrammatic view of hypothetical automobile laryngeal trauma.

Pathogenesis of External Injury

Blunt trauma to the larynx may cause compromise of the airway. The most common laryngeal injury is a vertical fracture in the midline of the thyroid cartilage[10] (Fig. 4). Depending on the severity of the injury, thyroid fractures can lead to a number of events: (1) flattening of the thyroid ala against the spine can cause overlapping, (2) tears may occur in the glottic and thyroarytenoid folds, (3) intralaryngeal hematoma may arise, (4) there may be intrinsic muscle injury, (5) there may be arytenoid cartilage dislocation, and (6)

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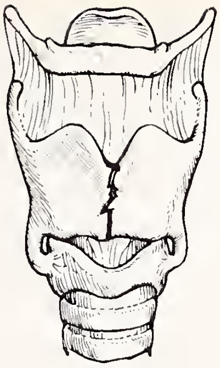

Figure 4

The most common laryngeal fracture: a vertical midline thyroid cartilage fracture.

bilateral abductor paralysis secondary to recurrent nerve damage is a possibility.[4]

Cricoid cartilage fractures with associated mucosal tears and hematoma may occur alone or in association with thyroid cartilage fractures. Certainly the cricoid area, being a rigidly compartmentalized region, can least of all tolerate insult to its aperture.

Thus, any of the above-mentioned trauma can lead to closure of the airway.

Signs and Symptoms

The major signs and symptoms of laryngeal trauma are: (1) aphonia, (2) sub-cutaneous emphysema, (3) pain, and (4) loss of palpable landmarks.[3]

Aphonia (loss of voice) may be due to arytenoid dislocation, massive lacerations of the false and true cords, and/or loss of the anterior commissure due to multiple thyroid cartilage fractures.

Subcutaneous emphysema may become enormous and extend from the upper extremities to the scalp. Cardiac tamponade has occurred from dissection of air into the mediastinum.

Pain is often present and the exact location can be identified. Pain is precipitated with coughing, swallowing, sneezing, blowing of the nose and turning of the head.

Loss of palpable landmarks is the most reliable sign. The neck is flat and usually easily palpable structures such as the thyroid notch and cricoid cartilage feel nebulous.

Some authors have added what might be called a fifth important sign, the need for early tracheotomy.[5] A patient whose airway is so compromised that a tracheotomy is necessary no doubt has some severe laryngeal injuries.

Other signs and symptoms to bear in mind are hemoptysis, hoarseness, progressive stridor, cyanosis secondary to laryngospasm, substernal retractions, fixed laryngeal structures, and visible pieces of cartilage in the larynx.[4] [5] Hemoptysis as the sole symptom may also indicate the need for bronchoscopy to rule out a tracheoesophageal tear. Hoarseness may be the only sign of a unilateral vocal cord paresis due to a fracture of the lateral thyroid ala at the cricothyroid articulation.[6]

Diagnosis

A "high index of suspicion" aids the diagnosis. Essential studies include the following: (1) Indirect laryngoscopy. This is not usually helpful in acute trauma because of edema, hematoma, pain, and the often intoxicated state of the patient. (2) Direct laryngoscopy. One must be prepared to do a tracheotomy because this maneuver can precipitate airway obstruction. (3) Roentgenograms. A chest film and anterior-posterior and lateral soft tissue films of the cervical neck are important. The former may detect mediastinal emphysema; the latter may show free air in the soft tissues of the neck. (4) Laryngograms. Dye placed on the base of the tongue may show false passages, avulsion tears and fractures. The escape of dye into the anterior neck is an absolute indication for surgical intervention.

Treatment

Due to the enormous problems associated with untreated laryngeal injuries, assuming the patient survives the airway insult, most authorities agree that it is better to have several negative explorations than one chronic laryngeal stenosis.[6] [7] Laryngeal injuries can be treated with "conservative" measures up to ten days after the initial injury. Further delay, with concomitant organization, fibrosis and scar formation compromises results. No patient with a cervical injury must be manipulated until the absence of a cervical spine injury has been ruled out.

Certainly, tracheotomy must always be considered. Tracheotomy not only guarantees an airway, it also serves as an escape route of trapped air from soft tissues. No patient with a possible laryngeal injury should be left unattended until a tracheotomy has been ruled in or out. One must bear in mind that when difficulty is encountered in locating the trachea during tracheotomy, the problem of laryngotracheal separation may be present.[6] The trachea most likely is retracted lower than expected into the neck. These injuries will require open reduction, primary anastomosis, and possible recurrent nerve exploration.

Open Reduction and Stabilization

Open reduction and stabilization is indicated for lacerations, large tears and cartilage fractures or displacement.[8] [9] [10] [11] The treatment consists of mucosal closure, stenting for six to eight weeks, wiring of the cartilaginous fragments and possible mucosal grafting. Antibiotics are given from 10 to 14 days. Recent studies have supported the immediate use of steroids to decrease granulation tissue formation with no observable adverse effects on wound healing.[5]

Certainly there are variations to this regimen of treatment. Intra-laryngeal hematoma may often be treated with steroids, voice rest, humidity, without tracheotomy.[5] Patients with tears at the tracheoesophageal junction often present only with hemoptysis and may require bronchoscopy and possible thoracic treatment, if a tension pneumothorax develops.

The following cases seen and treated by the author review the principles and problems involved in such injured patients.

Case 1

A 23 year old female was involved in an automobile accident and admitted with a diagnosis of mandibular fracture. The patient developed upper respiratory difficulty with associated cervical emphysema requiring endotracheal intubation. Upon transfer to the University Hospital, a tracheostomy was performed. Bilateral pulmonary infiltrates developed and a right apical pneumothorax necessitated a chest tube. Respiratory assistance became necessary and the patient developed acute renal failure. Despite vigorous treatment for a shock lung syndrome, the patient's condition deteriorated and she expired. Autopsy revealed a large defect in the anterior larynx with almost complete destruction of the left thyroid cartilage and numerous fracture sites of the right side of the thyroid cartilage.

This case illustrates that severe trauma to the larynx may indeed play a significant role in causing a sequence of events leading to death. If this unfortunate patient had survived, a difficult reconstructive procedure would have been necessary to restore laryngeal voice and airway function.

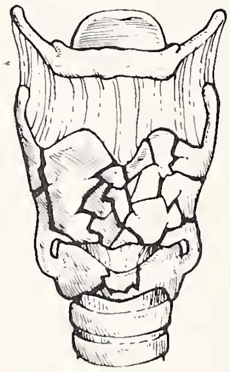

Figure 5

Case No. 1: Comminuted thyroid cartilage fracture

Case 2

A 41-year-old white male was involved in an automobile accident and noted to have respiratory distress and progressive swelling of the neck. Upon transfer to the University Hospital, dyspnea, cyanosis and respiratory distress were observed. Examination also revealed marked edema and subcutaneous emphysema of the neck. An attempt to visualize the larynx by indirect examination was not possible. No laryngeal landmarks could be felt. The patient's voice was weak and hoarse and he complained of pain on swallowing. Chest examination revealed subcutaneous emphysema over the upper chest, primarily in the supraclavicular area anteriorly. The remainder of the physical exam was felt to be within normal limits. The impression at the time of the evaluation was one of laryngeal fracture with severe upper respiratory obstruction. A tracheotomy was performed under local anesthesia with the patient in a sitting position. The patient was anesthetized through the tracheotomy tube and surgical exploration of the larynx was undertaken. The thyroid cartilage was found to have a vertical fracture through its lower margin; the cricoid was found to be intact. The thyroid was opened and the interior of the larynx was visualized. There was marked distortion of the left false cord and ventricle with a mucosal tear running through the ventricle and associated with marked hematoma and upward retraction of the false cord. In addition, the epiglottis was avulsed from the thyroid cartilage and retracted superiorly. No other fractures of the thyroid cartilage were found. The mucosa of the left ventricle was then approximated, using 4-0 chromic sutures. Following this, a stent was fashioned utilizing the index finger of a surgical glove into which a block of sterile foam rubber was inserted. This was put into the laryngeal lumen and fixed with a through-and-through #28 wire suture which was tied outside the skin on buttons (Fig. 6). Following this, the mucosa of the left lateral side of the avulsed epiglottis was approximated and the epiglottic base was reattached to the inner surface of the thyroid cartilage with 3-0 Ethiflex. The midline of the thyroid fracture was then approximated and the subcutaneous tissues and skin closed.

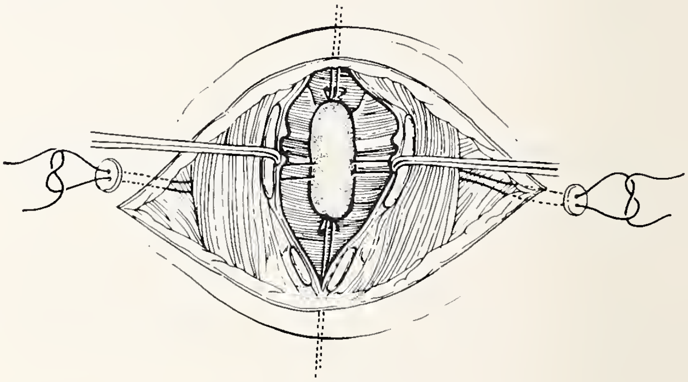

Figure 6

Repair of laryngeal fracture using midline thyrotomy approach and intralaryngeal stent.

Postoperatively, the patient was placed on antibiotics and steroids. A portable chest film following surgery revealed marked subcutaneous emphysema throughout the chest as well as pneumomediastinum. No pneumothorax was noted. Followup chest films the next day revealed a gradual resolution of the subcutaneous and pneumomediastinal emphysema. The patient's temperature had returned to normal 36 hours after surgery and his general status was considered to be good. The patient subsequently had an uneventful recovery.

This case illustrates the value of accurate diagnosis and prompt and correct treatment. Further delay in the treatment of this patient could have resulted in an unfortunate ending.

Case 3

A 17-year-old Negro male was admitted to the hospital after being involved in an automobile accident in which he received massive facial lacerations and flattening of the anterior neck with a mild degree of cervical emphysema. Lateral soft tissue views of the neck revealed questionable air in the soft tissue of the anterior neck. Blood studies were all within normal limits. Physical examination had revealed blunting of the anterior neck with a mild degree of crepitation to palpation. There was mild tenderness to palpation of the thyroid cartilage. There were no abnormalities of the voice, no hemoptysis or pain with turning of the head or coughing. Indirect laryngoscopy could not be performed because of the uncooperative attitude of the patient. The patient was taken to surgery, where a tracheotomy, facial laceration and nasal fracture repair and exploration of the neck were carried out. A vertical midline thyrotomy incision was performed which revealed a vertical midline fracture of the thyroid cartilage extending from the thyroid notch to the inferior border. There was also a fracture in the trachea at a level just below the cricoid cartilage in the area of the second tracheal ring. The cricoid cartilage was seen to be tilted antero-inferiorly and there was a non-displaced fracture in the midline. There was also a tear in the thyrohyoid membrane and a tear through the cricothyroid membrane. The internal laryngeal structures were to be free of mucosal lacerations or hematoma. A stent was placed intralaryngeally extending from the area of the second tracheal ring to approximately 3 mm above the true vocal cords and was secured in the usual fashion. A tracheotomy tube was put into position. The patient's postoperative course was essentially unremarkable. Due to the lack of severe intralaryngeal injury, the stent was removed 10 days after its placement. The patient's voice was essentially normal and there were no respiratory problems. The patient was discharged from the hospital three weeks following his admittance with no residual physical problem.

This case demonstrates a successful outcome of an accurately diagnosed and aggressively treated laryngeal injury.

Case 4

A 28-year-old male suffered a gunshot wound to the right anterior midline of the neck with lodging of the bullet in the left posterior neck. Initial evaluation consisted of cervical and chest x-rays, intravenous fluids, and exploration of the left neck via endotracheal intubation without difficulty, and a tracheotomy at the end of the procedure. Surgery consisted of appropriate treatment of internal jugular vein damage. Difficulty in post-operative decannulation resulted in an Otolaryngology consultation. A review of the initial cervical films showed soft tissue free air; plugging of the tracheotomy tube resulted in marked respiratory difficulty with associated severe hoarseness. Immediate laryngograms were consistent with laryngeal fracture with escape of dye into the left neck. Laryngoscopy revealed foreshortening of the intrinsic larynx and massive distortion of the left hemi-larynx. Open reduction on the tenth post-injury day revealed comminuted fracture of the left thyroid lamina with an associated fistula through the laryngeal ventricle with an associate-mucosal dehiscence. Stenting, wiring, and mucosal closure was performed. The patient was placed on antibiotics and steroids and discharged four days after surgery with a tracheotomy in place and weekly follow-up. Four weeks later the patient was re-admitted; the stent was removed under anesthesia. The intrinsic larynx appeared normal with bilateral cord mobility seen under lightened anesthesia. The tracheotomy was removed 24 hours later with a normally functioning larynx.

This case illustrates how laryngeal injuries can be overlooked when attention is diverted to other injuries.

Summary

A high index of suspicion is necessary to diagnose life-threatening laryngeal injuries. Cervical emphysema, increasing airway obstruction, palpable evidence of fractures and/or dislocations, pain, voice abnormalities, the demonstration of false passages, and a visible piece of cartilage seen in the larynx with direct laryngoscopy are all warning signs of laryngeal injury. A tracheotomy must always be uppermost in the examining physician's mind. The prompt and correct treatment of acute laryngeal injuries is usually successful; the inaccurate, overlooked, misdiagnosed laryngeal injury is uniformly tragic.

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Rigid Dressings: Poor Results

Morris D. Kerstein, M.D., Howard Zimmer, M.A., and Frederick E. Dugdale, M.D.

Abstract—Twelve elderly male patients underwent below-knee amputation for the complications of arteriosclerosis obliterans with immediate application of a rigid plaster dressing. Nine failures ensued with five requiring revision to the above-knee level. Specific contraindications to the use of the rigid dressing and immediate prosthesis are noted; the evaluation of a temporary PTB plaster prosthesis should be considered.

Controversy remains concerning the application of the post operative rigid dressing for major lower limb amputation. Reasons for slow acceptance may be undocumented difficulties and failures in the past ten years since its introduction.

It is accepted that amputation is but a step toward rehabilitation. The proper perspective includes not just the decision to amputate, but the type of amputation, proper timing and post-operative care, including physical, vocational and psychological rehabilitation. Proper use of a prosthetic and the return to a functional state is the goal of hospital care. It has been suggested that the application of an immediate rigid dressing will allow tissues to rest and heal while permitting earlier ambulation. It is claimed by some that wound healing is improved; pulmonary embolism and stasis pneumonia are eradicated. The authors agree there are intangible but definite psychological benefits, as reflected in the motivation of the patient, yet, the gains and defects are not well defined.

To clarify the logic of the theoretic concepts, one of the authors (M.D.K.) attended a course in prosthetics and rigid dressings at New York University Postgraduate Medical School. The twelve cases done following the course are presented.

Materials and Methods

Twelve male patients (nine white, three black) with average age of 68 years underwent below knee amputations for the complications of arteriosclerosis obliterans with immediate application of a rigid plaster dressing. Prior to admission all the men were ambulatory. Seven had well controlled diabetes mellitus. Arteriography confirmed non-reconstructable situations in all cases. All patients were placed on antibiotics and had appropriate drainage because of gangrenous or pre-gangrenous changes of the involved extremity.

Once the cardio-pulmonary status was stabilized and laboratory studies completed, all the patients underwent elective below knee amputation utilizing the posterior myoplastic flap technique of Warren,[2] with immediate application of a rigid dressing in the operating suite as described by Burgess et al.[3]

Postoperatively nine of the twelve patients had either pain, fever and/or leukocytosis requiring removal of the rigid dressing. Five of this group of nine did not respond to conservative measures to correct local sepsis and required revision to the above knee level. The remaining four of nine had a protracted hospital course and healed by secondary intention. There were no deaths in these patients studied.

Discussion

The post-operative management of the below knee amputee begins with the original decision for amputation. The Department of Rehabilitative Medicine should see potential amputee patients pre-operatively for physical and psychological help.

In the operating room, wound closure was followed by the application of a rigid plaster dressing. Close observation and care resulted in five of twelve patients requiring further revision to an above knee amputation.

The signs of an imminent problem; burning sensation, fever, pain were correct. The benefits of rapid healing and rehabilitation were not realized in all patients studied.

Rigid dressings of any sort are to be condemned in the patient with precarious circulation. There are no fingernails or toenails to visualize to estimate whether collateral circulation is present. To remove all opportunity to watch the wound is not reasonable. Pressure can only threaten a tenuous collateral circulation to the soft tissue and skin.

Immediate post-operative fitting does not allow early normal walking, particularly in the elderly patient with previous disease and infection. The ambulation should be with limited weight bearing, not biped walking as suggested by some authors.[4] Weight bearing before proper wound healing is dangerous. Where the patient represents the potential for delayed wound healing, the rigid dressings probably, and

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ambulation certainly is contraindicated. This situation may exist in the presence of poorly controlled diabetes mellitus, severe local infection, corticosteroids, anemia, malnutrition and uremia. Elderly patients with poor peripheral vascularization, with an intercurrent disease and recent sepsis locally should be carefully screened. The obvious contraindications for an immediate rigid dressing and prosthesis should be an uncooperative patient, senility, confusion, language barrier and neurologic disease.

The ultimate goal of the rigid dressings is earlier application of the prosthesis. Therefore, the purpose of the immediate fitting is a form of conditioning. A carefully prescribed exercise program under the direction of a physiatrist in conjunction with a trained therapist and the primary surgeon is required to achieve that strength, endurance, coordination and range of motion needed to succeed. Patient instruction by the surgeon with nursing supervision alone is inadequate to meet the needs of the patient and achieve the goals of rehabilitation. Maximum safety and efficiency is only achieved through knowledgeable professional instruction,[5] properly timed.

Patients may obtain their prostheses earlier, but the method used by the author is not always applicable and strict guidelines are required.

In those patients not candidates for a rigid dressing and immediate prosthesis, the early use of a temporary PTB plaster prosthesis after the wound is healed is an acceptable alternative.[6] The temporary plaster of paris device can be fabricated in 24 hours. Partial weight begins when the wound is healed and sutures removed. Full weight bearing should be complete at six weeks. Over a ten-week period the patient should be 90% trained.[7] Therefore, the maximum time saved by the immediate application of a rigid dressing and prosthesis is two weeks, assuming there are no complications. Previous experience has suggested a delay of three to six months before fitting of the prosthesis. This delay was caused by poor coordination between the surgeon, nurse and physiatrist.

Russek has shown that the quality of ambulation some three months following amputation and training is the same in patients with immediate prosthetic fitting and those with delayed temporary prostheses. The requirement being that a prosthesis is applied as soon as the wound is healed and an active rehabilitation program is instituted.[8] The temporary prosthesis should become an integral part of the amputee physically and psychologically.

Eighty-five percent of the amputations done in the United States are by general surgeons, yet only 1.1% have been in attendance at courses approved by the Committee on Prosthetic and Orthotic Education of the National Research Council over the last six years.[5] Immediate prosthetic fitting is probably best suited to large medical centers with prosthetic and rehabilitation facilities immediately available. The use of temporary PTB plaster prostheses applied after wound healing has taken place should now be included in the post-operative rehabilitation of selected lower limb amputees.

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An Anephric Patient In Hepatic Coma:

A New Role for Hemodialysis

Mark Dubay, M.D. and Mark Izard, M.D.

Abstract—A case report of an anephric patient in acute liver failure, treated by intent daily hemodialysis, is presented to demonstrate that survival appeared enhanced by this mode of therapy. Further comment is made regarding infectious hepatitis not being the only cause of hepatocellular disease in hemodialysis patients. This patient demonstrated central zonal hepatic necrosis, shown by liver biopsy. In the past there have been rather equivocal results from the use of hemodialysis in liver failure. This report demonstrates that daily dialysis of an anephric patient in liver failure appeared to improve his level of consciousness while maintaining optimal azotemic chemistries.

During recent years an increasing number of patients with end stage renal disease have been placed on chronic hemodialysis. Numerous complications have been noted: some referable to the underlying disease, others to the treatment. Dialysis-related hepatitis has received particular attention because of ready transmissibility, high virulence and mortality rate. The following case report involves another type of dialysis-related hepatic complication.

Case Report

A.P. is a 54-year-old Caucasian male with a four year history of chronic renal disease from familial interstitial nephritis. He has been on coil machine hemodialysis twice weekly for eight months and was fully rehabilitated. A sister has been on the same dialysis program for three years. He was admitted with a three day history of a febrile illness, associated with persistent diarrhea and vomiting leading to profound volume depletion with a eight pound weight loss. Blood pressure was 80/60 supine, 60/40 standing. Hypotension was noted during dialysis and corrected with saline infusion. Routine laboratory studies were acceptable for a dialysis patient. Liver function studies were normal, except for an SGPT of 46 (normal less than 25). Prothrombin activity was 9% (he was on coumadin for cannula clotting prophylaxis). Prothrombin time was quickly corrected off coumadin. Australia antigen was negative. Upper and lower bowel series were normal. A cholecystogram showed cholelithiasis. Clinical impression was a viral gastroenteritis. He responded well to supportive therapy and was discharged home.

A week later he was readmitted because of exertional dyspnea and orthopnea. He also noted a productive cough, anorexia, fever and diarrhea. He had bilateral anterior chest discomfort, especially on deep inspiration. He denied abdominal pain, jaundice, melena, as well as exposure to anyone with jaundice. He denied any exposure to carbon tetrachloride, phosphorous or chloroform.

On physical examination, the patient was a lethargic, non-icteric white man in respiratory distress. Vital signs: BP 170/100, P 88R, T 103°F, R 33. He showed evidence of hypervolemia, with a weight increase of twelve pounds in a week, venous congestion, pulmonary rales and some peripheral edema. A pericardial friction rub was present. A slightly tender liver edge was palpable two centimeters below the right costal margin.

Chest X-ray confirmed congestion and pleural effusions, as well as a probable right lower lobe infiltrate. EKG was normal. Hct=17%; WBC=15,800, with a shift to left; BUN=19 (last dialysis was the previous day). Blood sugar was 96. Gram stain of sputum showed gram positive diplococci.

The clinical impression was uremic pericarditis, pneumococcal pneumonia and hypervolemic congestion, secondary to fluid overload from dietary indiscretion. He had apparently been forcing fluids despite instruction to the contrary. He was treated with I.V. Keflin, oxygen and other supportive means.

Clinical course was characterized by a rapid onset of stupor and coma associated with asterixis and bilateral Babinski signs. Laboratory studies showed an alkaline phospatase of 140, which later rose to over 1000. SGOT and SGPT rose to levels exceeding 2000. LDH over 4000. Serum bilirubin was only 2 mg.ml. Australia antigen remained negative.

Clinical impression was severe hepatocellular dysfunction with hepatic coma, probably in infectious process from dialysis. Conservative treatment was instituted, i.e., 10% dextrose infusion, cleansing enemas, neomycin, Solu-cortef 200 mg every four hours. He was placed on daily hemodialysis empirically, not only to sustain maximal supportive therapy, but also in the hope of decreasing total body ammonia by reducing urea levels, since some urea is converted to ammonia in the gut.

After five days of this management, the patient began to improve, making spontaneous movements and finally responding to verbal commands. Clinical and chemical improvement continued and he finally achieved an excellent recovery. Liver function studies returned to normal and the pericardial friction rub disappeared, as the patient became normovolemic.

A liver biopsy was performed with the Menghini technique. The results showed central lobular necrosis, with no evidence of infectious hepatitis, bile stasis or passive congestion.

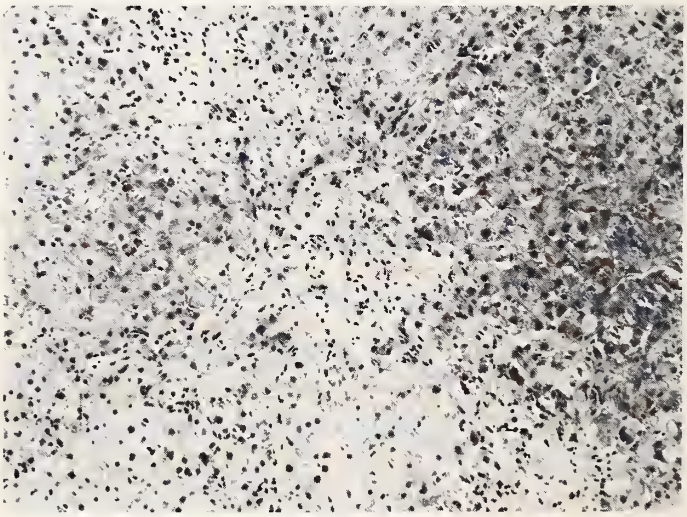

Figure 1

Liver needle biopsy with centrilobular anoxic necrosis H & E x 100.

DR. MARK DUBAY, Resident in the Department of Obstetrics and Gynecology; DR. MARK IZARD, Director, Hemodialysis, both at Hartford Hospital.

Discussion

Since the patient was on chronic hemodialysis, it was initially feared that we were dealing with hepatitis of an infectious nature, so the biopsy findings surprised us. Central zonal hepatic necroses is usually the result of hypoxia. Since the oxygen tension at the central portion of the lobule is lower than any other portion of the lobule, this region is most susceptible to hypoxia. Hypoxia, provoking centrilobular necrosis can result from many causes, including right-sided heart failure, hypovolemic shock of hepatic toxins, such as carbon tetrachloride, chloroform and phosphorous. Constrictive pericarditis or pericardial effusion can also be associated with centrilobular necrosis.[1]

With the exception of toxins, all of these precipitating factors are associated with a decrease in cardiac output. This patient was exposed to moderately severe hypovolemia and hypotension followed by hypervolemia. The abrupt volume change leading to hypovolemia was felt to be the etiology of central lobular necrosis. Pressor amines were never used to support blood pressure. The pericarditis did not seem related in this patient. There was no evidence of pericardial constriction or tamponade. Pericarditis frequently appears in uremia patients ill from other factors, such as infection or nutritional disorder, and often fails to correlate with azotemia or the magnitude of the uremic syndrome.[2]

Common factors of hepatic coma were not evident in this case, such as electrolyte imbalances, hypokalemia and acidosis. No GI bleeding occurred. Blood gas studies remained normal. Systemic arterial hypoxia was not noted. Blood ammonia levels were not performed because of the unavailability of these in our hospital setting.

Observers have shown an inherent unreliability of correlating ammonia levels with clinical status in hepatic encephalopathy.[3] [4] A major portion of the total body ammonia is intracellular, and as extracellular ammonia is removed, intracellular ammonia shifts extracellularly to equilibrate. (And it is well known that only the NH_3 form of ammonia causes the symptoms of hepatic coma.) Measurements of the amount of ammonia removed by dialysis by Keynes in 1968 showed large amounts but these were not reflected by the post-dialysis ammonia blood level.[5]

Urea is removed from the body much more effectively than ammonia by dialysis, especially in the uremic patient. This may be important since excess urea in the body may allow further conversion to ammonia by the gut. Hence the theory for the use of hemodialysis either in a uremic with incidental hepatic coma, or in the patient with hepatic coma, who develops acute renal failure.

In the past there have been rather equivocal results regarding the use of hemodialysis in liver failure.[6] Many of the reported studies have been individual cases, as is this paper. The mortality of these patients appears to depend upon the cause of hepatic coma, as well as the extent of liver damage. Cirrhotics can go in and out of coma with regularity, depending on protein intake, abuse of ethanol, and utilization of effective conservative measures in treatment. These patients usually have normally functioning residual liver tissue. On the other hand, comatose patients with fulminant hepatitis or massive liver necrosis, e.g., secondary to halothane, rarely do well with any form of therapy.[7] [5] The use of hemodialysis usually fails miserably here. If the patient has normal renal function, one wonders about the efficacy of hemodialysis management in removing the "toxins" produced in hepatic coma. Further study is warranted concerning the place for hemodialysis in liver failure.

We do favor the intensive (daily) use of hemodialysis in the anephric patient with an acute potentially reversible hepatic encephalopathy. This therapy affords the best metabolic management of such patients' uremic syndrome, i.e., correction of fluid and electrolyte imbalances, as well as effective removal of urea. Concomitant transfusions augment the supportive therapy, and perhaps enhance hepatic oxygenation. Such therapy may also be applicable to the pre-dialysis chronic renal patient with acute hepatic encephalopathy. The role of exchange transfusion and heterologous liver perfusion here is uncertain and warrants further study.

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Microscopic examination of a liver needle biopsy revealed a widespread discrete centrilobular anoxis necroses, characterized by loss of pericentral hepatocytes within an intact sinusoidal reticulin framework. Pericentral Kupffer cells contained abundant lipochrome pigment. The peripheral portions of the liver lobules showed only mild hepatocellular alterations with cytoplasmic swelling, focal microvacuolar fatty change, and basophilic cytoplasmic granules. Martin M. Berman, M.D., *Member of the Pathology Department, Hartford Hospital.*

Evaluation and Treatment of Hodgkin's Disease in the 70's

Lawrence H. Einhorn, M.D.

Abstract—Hodgkin's disease previously was thought to be inexorably fatal. However, proper understanding of the principles and applications of radiotherapy for limited Hodgkin's disease have shattered the old pessimistic concepts concerning the prognosis, and newer usage of combination chemotherapy for more disseminated disease has greatly increased the percentage of complete remission and the duration of the remission, and probable cure of a high percentage of patients with disseminated Hodgkin's disease. The previous dismal outlook and approach to the patient with Hodgkin's disease is no longer warranted or justified.

Hodgkin's disease is a disorder of unknown etiology affecting lymphatic tissue. The hallmark of diagnosis remains lymph node biopsy demonstrating Reed-Sternberg cells. However, the proper clinical and histological setting must also be considered. Recent reports raise doubts as to whether the Reed-Sternberg cell is unequivocal evidence of the presence of Hodgkin's disease, as these cells have been found in other disease states.[1, 2, 3]

Pathology

The initial evaluation is the lymph node biopsy by which the diagnosis is usually made. There is definite prognostic significance in subdividing this into four distinct pathological types:[4]

1) lymphocytic predominant—best prognosis;
2) nodular sclerosis—next best prognosis; mediastinal nodes present in 80% of cases; patient usually female; Reed-Sternberg cells often in lacunae here
3) mixed cellularity—lymphocytes, granulocytes, eosinophils, histiocytes, plasma cells, Reed-Sternberg cells
4) lymphocytic depletion—worst prognosis; uncommon.

Further prognostic significance can be obtained by the documentation of vascular invasion in the biopsy specimen[5] which can be seen in approximately 10% of biopsy specimens from patients with Hodgkin's disease when an elastica stain is employed.[6]

Staging

The staging of Hodgkin's disease is:[7]

Stage I	Disease limited to one lymph node or lymphoid region.
Stage II	Involvement of two or more lymphoid regions, but limited to one side of the diaphragm.
Stage III	Involvement of lymph nodes above and below the diaphragm, and/or Waldeyer's ring, and/or the spleen.
Stage IV	Involvement of extranodal sites such as the lung, liver, bone marrow, bone, skin, and/or other viscera. (However, solitary extralymphatic involvement adjacent to involved lymphatic tissue in an otherwise Stage I or II patient is felt not to represent true Stage IV disease and is best treated by extended-field radiotherapy. This would then be classified as Stage I E or II E (E = extra-nodal)
A—	No systemic symptoms.
B—	Unexplained fever, night sweats, or weight loss.

Evaluation

It has become increasingly important with these newer methods of treatment that every patient with Hodgkin's disease be properly and thoroughly evaluated as to the extent of his disease for only then can a decision be made as to the proper form of treatment.

A complete history and physical examination is part of the evaluation of every patient with Hodgkin's disease. Careful attention is paid to the presence of systemic symptoms (fever, night sweats, weight loss). A complete physical is done, concentrating on all lymph node-bearing areas, liver, spleen, and evaluation for any bone pain or tenderness. A complete blood count with platelets, sed rate, BUN, liver function tests (alkaline phosphatase most important), serum protein electrophoresis,[8] serum copper,[9] PA and lateral chest (tomograms if indicated), liver and spleen scan, and bone marrow aspiration, or preferably bone marrow biopsy,[10] and total body lymphangiograms, and total body gallium scans[11] are done on

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each patient. Each patient is skin-tested with PPD, histo and mumps to test for cutaneous anergy.[12] It has been our policy to prophylactically administer INH to all our Hodgkin patients treated with chemotherapy who have a positive PPD skin test.

Laparotomy and Splenectomy

A bipedal lymphangiogram is done on each patient. Lymphangiography was a big advance in increasing the accuracy of proper staging of Hodgkin's disease,[13] but it has definite limitations.[14] Although it remains useful in planning radiation ports and follow-up of abdominal lymph nodes, lymphangiography has limited value as a staging procedure because it may falsely suggest the presence or absence of abdominal disease. The results of several well-conducted independent studies[15] [16] [17] have recently been compiled[18] and they clearly indicate our inability to determine the presence or absence of abdominal disease with the previously mentioned methods of staging. The results in 145 patients with Hodgkin's disease who underwent an exploratory laparotomy with splenectomy and open wedge biopsy of the liver revealed the following data:

1) Negative lymphangiogram—9 out of 74 (12%) revealed abdominal disease at laparotomy.
2) Positive lymphangiogram—15 out of 47 (32%) failed to reveal any evidence of Hodgkin's disease below the diaphragm.
3) "Equivocal" lymphangiogram—18 out of 24 (75%) failed to reveal any evidence of Hodgkin's disease below the diaphragm.
4) Clinically negative spleen—38 out of 137 (27%) had Hodgkin's disease in the spleen.
5) Clinically positive spleen—17 out of 45 (38%) revealed no evidence of Hodgkin's disease in the spleen after careful histological sectioning.
6) Clinically negative liver—4 out of 120 (3%) were positive for Hodgkin's disease after open wedge biopsy of liver.
7) Clinically positive liver (hepatomegaly, abnormal liver function test(s), or abnormal liver scan)—29 out of 32 (90%) revealed no evidence of Hodgkin's disease after careful histological sectioning following open wedge biopsy of liver.

It is clear from the above data that accurate assessment of Hodgkin's disease in the abdomen cannot be made without exploratory laparotomy and splenectomy with open biopsy of the liver. The surgery is well-tolerated with minimal morbidity and no mortality in the above series.[19] Such a rigorous diagnostic evaluation is mandatory to properly stage all patients with Hodgkin's disease if we are to avoid erroneous staging of these patients with resultant inappropriate treatment. The "false negative" lymphangiogram might result in radiotherapy in a patient requiring combination chemotherapy; this results in a reduction in bone marrow reserve associated with failure to achieve drug-induced remission and limited survival time.[20] The "false positive" lymphangiogram might deny the patient an opportunity for a cure with extended-field radiotherapy.

Thus it can be seen that laparotomy is required to accurately assess extent of disease and prognosis. The actual procedure includes biopsy of all suspicious nodes (grossly or via lymphangiography) with biopsy of para-aortic, porta hepatic, and splenic hilar nodes. An open wedge biopsy of the liver and splenectomy are also performed. There are several reasons for splenectomy.[21] There is no need to irradiate the spleen in Hodgkin's following splenectomy, which reduces the hazard of radiation-induced renal or pulmonary disease. Also, early splenectomy eliminates the occurrence of hypersplenism and possibly improves the ability of the patient to tolerate myelosuppressive chemotherapy.

It has been our policy to do a staging laparotomy on all patients with Hodgkin's disease except for those patients who have histological proof of Stage III or IV disease (e.g., Reed-Sternberg cells demonstrated in bone marrow or liver biopsy or diagnosis originally made on cervical node biopsy and subsequent inguinal node biopsy also revealing Hodgkin's). All patients with Stage I or II disease are treated with radiotherapy, and all patients with Stage III and IV disease are treated with combination chemotherapy. We never perform "curiosity laparotomies;" instead, we only do laparotomies to determine which modality of therapy is to be employed. Also, if a patient is elderly, or has significant cardiopulmonary disease, it is felt the advantages of staging laporotomy are outweighed by the risks of the procedure, and laparotomy is not performed on such patients.

Radiotherapy

The past decade has been characterized by an increasing application of extended-field radiotherapy with prophylactic inclusion of clinically uninvolved node-bearing areas,[22] "mantle-field" techniques to include cervical, axillary and mediastinal lymph nodes in continuity (3,000 to 4,500 rads delivered in 3 to 5 weeks), and total nodal radiotherapy which involves treatment of all major lymph node regions (cervical, axillary, mediastinal, para-aortic, pelvic, inguinal) and the spleen. The "mantle field" irradiates about 15% of the total bone marrow distribution, the para-aortic field another 15%, and the pelvic field about 35% for the average adult.[23] Thus total nodal radiotherapy encompasses irradiation of 65% of the total marrow pool.

Present results with radiotherapy clearly indicate the need for appropriate amount and distribution of irradiation. There can be no excuse for "limited" small dose radiotherapy. The relapse-free five-year survival rates for the various stages are:

1) Stage I and II—85-90%
2) Stage III-A (total nodal)—70%
3) Stage III-B (total nodal)—40%

Since at least 95% of all primary relapses occur during the first three years, relapse-free survival for the interval may be considered to be tantamount to a cure.[24]

Chemotherapy

Dramatic advances in chemotherapy for the treatment of Stage III and IV disease have likewise been impressive. Nitrogen mustard was the first chemotherapeutic agent to be used for this disease, and this was followed by orally-administered alkylating agents such as Cytoxan and Leukeran. Although significant amelioration of symptomatology with dissolution of involved lymphatic tissue was often produced by the use of these agents, greatly prolonged survival was not being achieved. However, during the 1960s, new agents for the treatment of Hodgkin's disease were discovered: alkaloid agents Velban[25] and Oncovin, high-dosage corticosteroid therapy,[26] and Procarbazine.[27 28]

However, it was not until the advent of combination chemotherapy that significant increase in complete remission and improvement in survival was realized. Combinations such as Velban and Leukeran[29] and Cytoxan, Oncovin, and Prednisone (COP) were highly effective, but the best results to date have been achieved with Nitrogen mustard, Oncovin, Prednisone, and Procarbazine (MOPP).[30] The rational basis for combination chemotherapy includes biochemical, cellular kinetic, and pharmacological considerations. Combinations are employed with differing host toxicity as well as differing mechanisms of actions for the oncolytic agents. The four agents employed for MOPP all are effective individually against Hodgkin's disease,[26 27 31 32] and they have different toxicities and mechanisms of action (Nitrogen mustard and Procarbazine are both myelosuppressive; therefore, the dosage of each is reduced).

The MOPP protocol is as follows:

Nitrogen mustard 6mg/M^2 day 1 and 8 (i.v.)

Oncovin 1.4 mg/M^2 day 1 and 8 (i.v.) (Maximal dose at one time is 2mg.)

Procarbazine 100 mg/M^2/day p.o. days 1 through 14

Prednisone 40 mg/M^2/day p.o. days 1 through 14 (cycles 1 and 4 only)

These courses are repeated every 28 days (2nd cycle starts day 29) for a total of six courses. The dosage is adjusted if WBC is less than 4000 and/or platelets are less than 100,000. The primary limiting toxicity is myelosuppression. Neurotoxicity, nausea, and vomiting are troublesome but reversible.

In most reported series using MOPP, the main patient populations have been previously untreated patients, and most of them have tolerated full and complete courses of MOPP quite well. However, it has been our experience that patients previously treated with intensive chemotherapy and/or radiotherapy were frequently unable to tolerate a full six cycles of MOPP due to significant previous myelosuppression, and the prognosis for complete remission was reduced, especially in those patients who had received previous chemotherapy and radiotherapy.

The duration of unmaintained remission following single agent remission induction is short (median duration 10 weeks). With the present regimen of MOPP, 81% of patients with Stage III or IV disease achieved a complete remission.[30]

Since MOPP combination chemotherapy has now been used at some centers for over 10 years, we are now compiling meaningful statistics on duration of remission and disease-free periods.[33] For patients achieving complete remission on MOPP combination chemotherapy there is a projected life-table median survival of 19 years![34] This is especially impressive data when one realizes that the median survival for patients with Stage III or IV Hodgkin's disease prior to MOPP was 19 months.

Studies performed by the Southwest Oncology Group[35] comparing the duration of complete remission with a standard 6 months of MOPP and then cessation of all therapy to a full 24 months of MOPP (6 monthly courses and then 18 months of "maintainance" MOPP given every other month, i.e., 9 courses over an 18 month period) revealed a significantly longer duration of complete remission for those patients receiving maintenance therapy (6+ years compared to 2 years). Although there has been no significant difference in survival in these two groups, I personally feel that as has been shown in acute leukemia, survival will be directly proportional to the length of the first complete remission.

A more recent study by the Southwest Oncology Group has been the addition of low dose Bleomycin to the standard MOPP regimen. Bleomycin had previously been shown to be an effective agent in Hodgkin's disease[36] and is ideal for combination chemotherapy because of its essential lack of myelosuppression. Bleomycin is given in a dosage of 5 units (1/3 of a vial) on day 1 and day 8 (at the same time as Oncovin and Nitrogen mustard) for the 6 monthly courses, and is not given during the 18 months of "maintainance" MOPP. The addition of Bleomycin has increased the complete remission rate for previously untreated patients to approximately 90%.[37] Since complete remissions in Hodgkin's disease are of such excellent quality and quantity, the improvement of the complete remission rate with the addition of Bleomycin is highly significant. I feel that the optimal therapy for all patients with Stage III or IV Hodgkin's disease is remission induction for 6 months with MOPP + Bleomycin followed by 9 courses of MOPP maintainance therapy over the next 18 months.

Another new study which may well produce improved results in Hodgkin's disease is the combination of total nodal radiotherapy and MOPP combination chemotherapy. Preliminary results reveal a higher complete remission rate and longer duration of remission with the combination approach in Stages I-B through III-B Hodgkin's than that achieved with radiotherapy alone.[38]

Although the results of combination chemotherapy with MOPP or MOPP + Bleomycin are excellent, the physician is still faced with some patients who have not responded to MOPP or have relapsed after a complete remission. If the patient has relapsed during a time when he was not on MOPP, we would favor reinduction with MOPP + Bleomycin. If the relapse is in a localized area, local radiotherapy may produce a significantly long remission. Velban[25] has no cross-resistance with any of the agents in MOPP + Bleomycin, and may produce a significant partial remission (although a complete remission would be unlikely). Adriamycin has perhaps the highest degree of activity in such a clinical setting, as even in MOPP failures or relapsers, it produced 40% complete remissions and 20% partial remissions.[39] The nitrosoureas are investigational agents and include BCNU, an intravenous drug, CCNU, and Methyl-CCNU, both oral nitrosoureas. BCNU has clear-cut activity here, with a 40% partial remission and 10% complete remission rate[40] [41] and CCNU appears to be as effective if not more effective than BCNU.[42] We have recently utilized a combination of Adriamycin + CCNU, with the dosages as described previously[43] in patients who failed or relapsed on MOPP or MOPP + Bleomycin and even in this refractory patient population, we have achieved 4 of 6 complete remissions.

Although remissions are significant, perhaps the most meaningful data reflecting the improvement in therapy in Hodgkin's disease is survival data. Before 1940, there was only a 6% 5 year survival. This improved to 25% in the 1940's, 34% in the 1950's, and 42% from the period 1960 to 1964.[44] Most of these improvements were a reflection of radiotherapy. However, in the 1970's, many cancer centers are able to achieve a 90% 5 year survival, and this marked improvement reflects modern therapy both with radiotherapy and combination chemotherapy.[45]

The word "cure" was carefully avoided in the past in discussions of Hodgkin's disease; instead, one used the term "long remission." However, rapidly accumulating data from a number of centers clearly indicate that cure is definitely probable for most patients with Stage I and II disease with radiotherapy, and also is clearly a strong probability now in many patients with Stage III and IV disease treated with combination chemotherapy. Certainly, a refusal to consider the possibility of cure in any patient with Hodgkin's disease is likely to lead to palliative therapy with major attention directed at avoiding toxicity and discouraging more intensive therapy which offers the possibility of permanent eradication of Hodgkin's disease.

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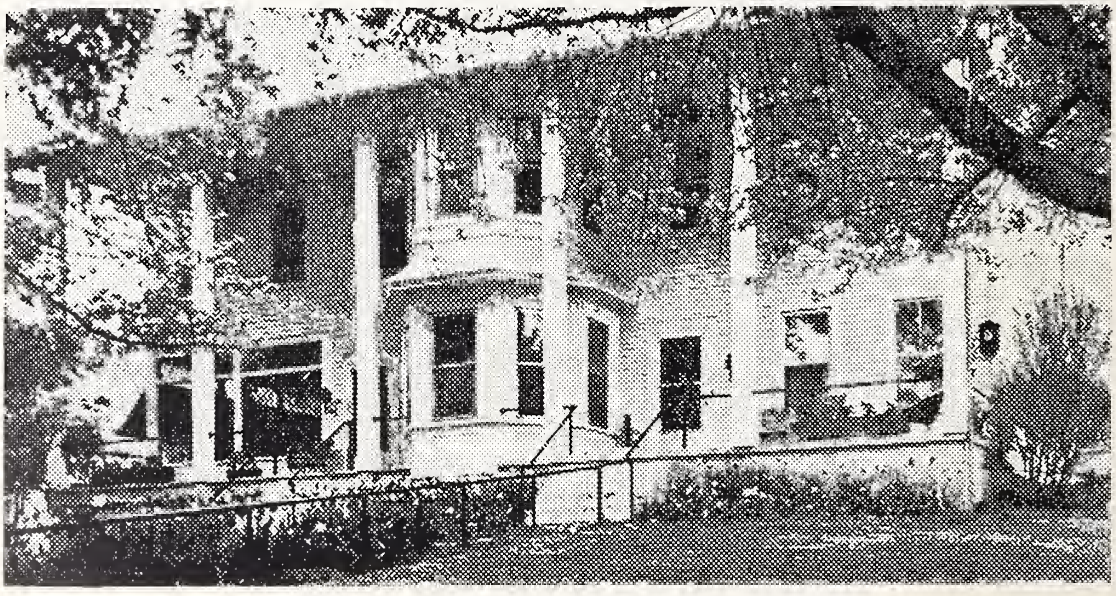

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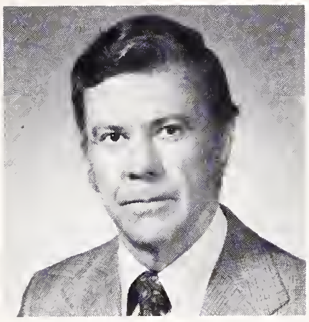
The President's Page



Mixed in with all the bad news is the barest glimmer of some good news. Congress, the public, and even some of our planners, are accepting the idea that the old American custom of "throwing dollars at our problems" will not improve our health statistics. Review of the leading causes of death suggests that we would do better to stop smoking, lose weight, and drive safer cars more safely. Drug abuse has moved from the slums to the suburbs. Alcoholism is endemic and its consorts, depression, loneliness and boredom, sit in every waiting room. These problems will never respond to a vaccine, surgery, or epidemiological studies.

Until recently it was generally accepted by the lay public and health care professionals that the quantity and quality of medical services were directly related to the overall health status and well being of the population. The answer, simply stated, lay in providing more health services: better financing, more doctors and greater application of technology. Actually there is more evidence to contradict this assumption than there is to support it.

Early in this century, tuberculosis and typhoid mortality rates had begun to fall rapidly even before the advent of specific drugs or immunization. The improvement in tuberculosis statistics was due in large part to improved living conditions including better nutrition and less crowding. The improvement in typhoid statistics could be traced to good sanitation, chlorination of the water supply, and improvements in personal health. In a similar fashion we have been protected from food borne diseases by modern facilities and distribution. It was the economics of the food industry, not considerations of health, that resulted in safe packaging and storage.

In a classic study, the Navajo-Cornell Field Health Research Project brought modern medicine to a poor and disease-ridden people beginning in 1955. Five years later the negative results were more striking than the positive ones. True, while there was a reduction in the incidence of tuberculosis, investigators reported no real evidence of a change in the pattern or prevalence of disease. The infant mortality rate persisted at three times the national rate and the diarrhea-pneumonia complex, the major cause of infant morbidity and mortality, was unaffected.

Poverty, at least when it comes to questions of health, means more than just being without money to purchase adequate medical care. The experience of the British under the National Health Service is illustrative: the poor still bear more than their share of illness and disability. This service was conceived on the basis that if free and easily accessible quality care were available a medical Camelot would follow. It simply did not happen. Low income groups remain a distinct hospital class.

After fifty years of declining mortality rates, an upward trend occurred in the sixties. That lung cancer is connected with one personal habit—cigarette smoking—seems proven. With coronary artery disease, the causal chain is more complex. The roles of diet, activity, smoking, and stress are so interrelated that it is fair to say that our whole pattern of life is involved— the pattern of an affluent society.

The general health of populations is not, therefore, directly dependent on medical services. Medicines and medical skill will not, in themselves, eradicate the illnesses of our society. It is the way we live—our life style, rich or poor—that determines our health problems, and it is social change, not medical technology, that will solve them.

As with the Navajo Indians, so also with our society at large: the immediate environment is the crucial factor. Disease is a way of life.

Guy W. Van Syckle, M.D.
President

Reflections From The Dean's Office

Robert U. Massey, M.D.

For the academic administrator in a public university, the approach of winter signifies more than dark mornings in the office and dusk falling long before the day is over. It is more even than the realization that it is already too late to plan for next year's new directions and for those changes in the curriculum which seemed so important but must now be put off until the year after next. The committee work, the concurrence by the faculty council, the approval of the president's office and the Board of Trustees cannot be achieved before June, and by that time next year is already in place. Winter signifies the meeting of the legislature.

The pace of change in the University is ordered and slow. It is set not by individual conservatism but by institutional inertia. Just as the bureaucracy is the buffer in government so in the university the decorous progression of the academic calendar, the orderly round of committee meetings, the strict parliamentary debate in the faculty council, the required approvals of the Board of Trustees—all inhibit the disruptive effects of unconsidered change.

This would all be very well if the forces of change came only from within, or if the external forces were channeled through a single conduit so that defense or response could be properly prepared.

Unfortunately, the academic health center does not enjoy the luxury of a closed community with perhaps a semiannual inspection by an episcopal visitor. Instead, as part of a public university and including a university hospital, it is subject to at least thirty powerful groups, each of whom believes it is no further than third in line, either by reason of legitimate claim, professional power, or community need.

The entire university is subject to these same or similar forces, but I suspect the blows and entreaties sustained by a department of medicine are several orders of magnitude greater than those borne by a department of classical languages. It can be argued that the professor of medicine is adequately compensated for his pains, and that the professor of Greek also has his reward, and that there is equity.

But that is little comfort to the academic administrator in a publicly supported academic medical center who is determined to keep his three-legged stool on the level. His institution is viewed by his masters in the state house as another expensive state agency, differing from the highway department or the department of corrections only in its mission, just as they differ from one another. His faculty members, on the other hand, know that they belong to an academic tradition whose beginnings are lost in the mists of the early middle ages, and whose future concerns nothing less important than human health.

Either by the power which it legitimately has or by giving and withholding of support, more than any other of the thirty masters, government seeks to control. The academic administrator anticipates with anxiety the gathering of the assembly; he knows that the power of government is strongest then, and that he must be most wary for the freedoms of the university. His institution's future may depend on how well he tells its story on one page, in three minutes.

He knows also that the State is only one of the many forces which would seek influence if not dominance over all or some part of his school or university hospital. Financial and personnel procedures, well designed for most state agencies, may be wasteful and inefficient in the university clinics. Demands for community service may drain away resources which should be available for education. Federal regulations may compel changes for which the medical center was not designed nor its faculty recruited.

The quality of a university depends upon the quality of its faculty and the vision of its Board of Trustees. But it also must be sustained by the very forces which seem often bent on controlling it. Charles A. Coolidge, senior member of the Harvard Corporation some years ago, gave some straightforward advice to new board members. For the state universities it applies more to those who have, or believe themselves to have, claims on higher education:

"DON'T MEDDLE . . . . You must realize that you are not an expert in education . . . As I see it, the job boils down to this: Do your best to see that the organization is good, that it is well manned, and that it runs smoothly—but don't try to run it."[1]

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ROBERT U. MASSEY, M.D., Dean and Professor of Medicine, University of Connecticut, School of Medicine, Farmington.

Connecticut Medicine

Editorials

Partnerships in Pediatric Graduate Education and Child Care

Connecticut, like the rest of the nation, is experiencing a growing concern for the cost and effectiveness of health care. The problems cited most often are the maldistribution and relative shortage of primary care physicians, and the duplication of programs, resources and facilities. These concerns have become legitimate interests for medical schools and community hospitals. The new University of Connecticut Health Center in Farmington and its affiliated hospitals have begun to share the leadership in regional planning for health services and physician education.

Over the past six years, the Departments of Pediatrics at the Medical School has catalyzed the creation of cooperative programs among community hospitals in Greater Hartford. This area has numerous child care facilities, and more importantly, pediatricians as well, who desire to develop a close working relationship among institutions. As an initial step, a Pediatric Advisory Council was organized consisting of pediatric directors from six hospitals and representatives from practicing pediatricians from each institution. The Council has been concerned with community child health needs and pediatric educational opportunities for medical students, residents and practicing pediatricians. Through the efforts of the Council, a pediatric graduate education program was developed which consolidated all of the existing training programs into a single organizational unit. The Combined Residency Program was launched July 1 of this year and involves six institutions.* The program also provides training opportunities for Family Medicine residents and pediatric house officers from the newly implemented Waterbury Regional Pediatric Program. Approximately 50 residents are currently enrolled in the program.

One of the chief advantages of the combined residency is the opportunity to share professional personnel. The faculty consists of 25 full-time and 50 part-time pediatricians. This sharing among the institutions has made available a complete spectrum of pediatric subspecialists which is expected to improve patient care and strengthen the educational program. The interchange of physicians among the hospitals should do much to eliminate the institutional constraints of the past and attract highly qualified house officers to practice in the State.

The combined program strongly encourages better utilization of child care resources in the area. In the past, services available at individual hospitals were frequently not shared and often were duplicated. Increased contacts among physicians will enhance the development of specialized regional pediatric services. Some such services are already underway, as cardiology at Hartford Hospital, neurology and rehabilitation at Newington Children's, neonatal intensive care at Dempsey Hospital and child and adolescent behavior at Mt. Sinai Hospital. Development of such specialized services can have a substantial impact on both cost and quality of care, as it permits individual hospitals to concentrate budgets and develop within each institution a group of personnel highly skilled in the specialty.

The teaching and delivery of primary care is of special importance to the Combined Residency Program. More than half the full-time faculty are general pediatricians. They, as well as pediatricians in practice, provide essential primary care role models to medical students and house staffs. Further, the clinical environments of the six hospitals vary widely, providing the house officer with a broad spectrum of general pediatric problems as well as those requiring tertiary care. The range of experiences available will allow residents ample opportunity to pursue the challenge of primary pediatric care. The majority of the graduates of the Combined Residency Program will be encouraged to enter general pediatric practice, an effort which it is hoped will help meet the needs of the more than one million children under eighteen years of age in Connecticut.

A Combined Residency Program such as this offers educational advantages not only to medical students and house officers, but also to physicians in practice. The program touches both pediatricians and family practitioners, exposing them to recent developments in pediatrics through their daily contacts with house officers and through regularly organized conferences, symposia, and lecture series. The creation of the strong continuum between graduate and continuing education provides yet another role model for students and house officers, suggesting future benefits for their practice years.

A significant sharing of the decision making process with the participating hospitals has brought about the reality of the program all the more rapidly. A central office for Pediatric Graduate Education has been established at the University with a full-time physician as director. The role of this office is coordination and program development, which also includes ongoing evaluation. This office is financed collectively by the newly created organization of hospitals, The Greater Hartford Hospital Consortium. This connection now links the efforts in pediatrics with the broader health care interests of the entire community.

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*Dempsey, Hartford, Mt. Sinai, New Britain General, Newington Children's and St. Francis.

Programs such as the combined residency should be of interest to institutions and medical professionals in many geographic areas. As it develops, the program is expected to demonstrate even further the benefits of cooperative leadership in the delivery of health services and education.

Robert M. Greenstein, M.D.
Associate Professor and Director,
Pediatric Graduate Education

Milton Markowitz, M.D.
Professor and Head, Department of Pediatrics
University of Conn. School of Medicine

PSRO and the Privacy Act: Progress in Confidentiality Guarantees

The most important civil liberties issue raised by PSRO is who will have access to patient data which review organizations must gather and process. Fears about potential government misuse of PSRO collected data were reinforced by new disclosures about the CIA, the FBI and Watergate illegal activities. Studies by the Bureau of Quality Assurance, DHEW, and Alan Westin's Project on Medical Records and Citizens' Rights for the National Bureau of Standards have revealed no violations of confidentiality in review activities and medical audits. In past years, our colleagues were relatively silent about the misuse of patient records by third party payers and did not institute punitive action against hospital personnel who leaked data in their daily work. Recently, fears about PSRO confidentiality violations have diminished, while concerns about the threatened loss of professional autonomy have markedly increased.

Under the terms of the PSRO Confidentiality Policy Statement, physician profiles will not be released to patients, consumer groups or public interest law firms. Physician support of PSRO was encouraged by DHEW pledges that physician data will remain confidential. Yet the release of these profiles may occur as a consequence of suits filed under the Freedom of Information Act. The Bureau of Quality Assurance holds that the Freedom of Information Act does not apply to PSRO's, as the organizations are not contractees, but this interpretation will be tested in the courts. Doctors concerned about the release of complex profiles cite the risks of damaged practices and reputations.

The Privacy Act of 1974 became effective on September 27, 1975, and permits disclosure of personal information, personnel and medical files, the disclosure of which was barred by the Freedom of Information Act. The individual may inquire of 79 Federal agencies whether they are keeping records on him and then request access to those records. After access, he can request that a record be amended and if denied this request, can appeal the refusal. DHEW maintains many record systems containing medical information. Estimates suggest that there are approximately 40 million health records in the Bureau of Indian Affairs, the USPHS, the V.A., the Department of Defense and other Federal health services. No clear estimate is available as to how many records are "dead" and how many are of children and adolescents.

Currently, the PSRO program is not subject to the Privacy Act. To have taken this step would have meant establishing a new centralized federal bureaucracy. The PSRO Confidentiality Policy Statement and Guidelines have been designed to parallel those of the Privacy Act except for several differences. These include the subject's access to records, physician oversight of record disclosure, availability of records to minors, etc. There is every expectation that PSRO's will come under the Act in the near future, whereupon additional requirements and guidance will be issued by the DHEW.

While a clause in the Privacy Act specifically protects the interests of minors, the PSRO Policy Statements *do not define minors,* but speak only of "individuals." The Bureau of Quality Assurance, responsive to inquiry, has agreed in the past ten days to establish a study group to write regulations for minors, who constitute a third of our population.

The "age of wisdom," the age at which treatments can be undertaken without parental consent, is being established by the courts. In California, minors may be treated for venereal disease over the age of 12, and birth control and abortions are available to minors without parental consent at child-bearing age and when minors are considered to be "sexually active." According to the Privacy Act, parents asking for medical records of a minor will be required to provide the responsible Department official the name of a designated family physician or health professional to whom the record will be forwarded with the warning that the minor has received medical care without parental consent. The designee will be asked to consider the effect that disclosure of information may have upon the minor before making that disclosure to the parents. Further, the designee will be cautioned that he is in a fiduciary relationship to the minor and is accountable to him for confidentiality breaches. When disclosures are made to parents, the Department must make a reasonable effort to inform the minor.

In these early days of PSRO and the Privacy Act, where no precedents exist, prudent consideration of the citizen's right to privacy is being balanced by the government's right to know, a right necessary to establish sound public policy.

Herbert S. Sacks, M.D.
Assoc. Clin. Prof. Pediatrics
and Psychiatry (Child Study Center)
Yale University School of Medicine

AMA Dues

One of the mandates assigned its members by the AMA House of Delegates at its June meeting in Atlantic City was to educate physicians in the issues involved in the dues increase, from $110 to $250.

No single editorial or article can do this comprehensively. It can be accomplished only by an ongoing process of communication within our profession. *Connecticut Medicine* will try to accommodate this process during the coming months.

We ask of our readers merely that they be open-minded and willing to listen, that they be fair and reasonable. Many physicians, unfortunately, have already made up their minds about the AMA, based not on fact and experience but on what the media have said. I am reminded of an invitation I accepted to speak to a group of Yale medical students several years ago about the AMA. One of the other speakers, a young faculty member, flaunted the fact that he was not a member of the AMA, though he had never attended one of its meetings nor read any of its communications. I remember thinking then that I hoped his scientific approach to a clincial problem would be more thorough and unbiased than his method of evaluating the AMA.

Interestingly, the largest increase in membership during the last couple of years has been among students, among internes and residents. After several years of wavering and debating, their leadership decided it would be better to work within an organization, and that their purposes and goals would be best achieved by working within the AMA. They have made a definite contribution to the AMA, and their participation has been mutually beneficial.

The best way properly to evaluate the AMA leadership is to attend a meeting of the House of Delegates, which is its policy-making body, and to see it function. Generically, the AMA is a national, voluntary association of which there are hundreds of other examples in our country. From an intensive study, it is my firm conclusion that ours is the most democratic of such associations, organizationally and functionally. I have asserted as much before many groups, and the assertion has never been challenged. Had I received a challenge, I would have answered: "Give me the bylaws of a more democratic organization, point out what makes it more so, and I'll introduce that provision before our House of Delegates."

On the assumption (cynical or not) that the greatest hurdle is money—the $140 increase from $110 to $250, the issue beyond which few want to go—permit me a question and the hope of a completely candid answer. Is the issue money, pure and simple? In deciding not to pay or to join the AMA, I hope no one will camouflage his answer with a rationalization designed to conceal a visceral disinclination to shell out more cash.

Let us not look at the *gross* increase of $140 or the total of $250, but at what it means *net*, after income taxes. It is the unusual physician, practicing in Connecticut, in whatever specialty or locality, who is not above the 50% bracket. Therefore we are not actually speaking of $250 but of less than $125 or, at most, an increase of $60 net a year.

Without going into details at this time, I can assure you that the increase was not casually arrived at. A committee of the House of Delegates on finances, named at the previous meeting in Portland, Oregon, worked the intervening six months on every aspect of the AMA's finances and budget before making this recommendation. The financial crisis was due to many causes, but essentially the Board of Trustees and House of Delegates lived beyond our income, with income-producing investments devastated by the worst national financial decline since the 1930s and the kind of inflation we have not seen for decades. The AMA does not exist in a social vacuum. The figure was arrived at after a drastic cut in the staff of the AMA from over 800 to about 600, accompanied by ruthless cutting of publications (including a reconsideration of the status of *Today's Health* and *Prism),* by making many scientific publications self-supporting, by a drastic cut in educational publications designed for the public, and by such measures as mandating reduced outlays for travel. Numerous standing committees were eliminated, many of them important and of public benefit. No evidence whatsoever of misuse of funds was uncovered, which, in the light of recent public disclosures elsewhere, is almost a certification of virtue in itself.

It is too much to ask physicians to master each and every detail that necessitated this increase in dues, but your elected representatives will try to elucidate them in the course of future publication. Your Connecticut leadership firmly believes that, if there were no AMA, another organization like it would rise up as certainly, if less miraculously, as the Phoenix. As much as the AMA needs you and your support, you, as individual physicians, need the AMA, especially now that federal and state agencies are intruding more broadly and deeply into the practice of medicine, even including the physician-patient relationship, with results not always advantageous to either. A profession, by definition, regulates its own standards. It is self-serving in the highest, most disinterested, and most honorable sense. If we do not provide the organization to set and maintain these standards, the job will inevitably be assumed by others, and with results inevitably detrimental both to the profession and to the public it seeks to serve.

Fred Fabro, M.D.

Oral Hypoglycemic Agents

Statement before Subcommittee on Monopoly Senate Small Business Committee

Philip Felig, M.D.

Mr. Chairman and Members of the Subcommittee:

I am pleased to have this opportunity to participate in these hearings on the oral hypoglycemic drugs. Over 5 years have now elapsed since the initial presentation of the findings of the University Group Diabetes Program indicating an increased risk of death from cardiovascular disease in patients treated with tolbutamide or phenformin. Since that time there has been considerable debate and controversy in the medical profession as to the validity of these findings and their implications with respect to the treatment of diabetic patients. My discussion will focus on the following areas: (1) Those aspects of the pharmacology and clinical applications of the oral hypoglycemic agents in which there is fairly uniform agreement among proponents as well as opponents of the UGDP study. (2) The impact which the findings of the UGDP study have had on medical practice. (3) The mechanisms by which the prescribing habits of physicians may be altered.

Virtually all experts in the field of diabetes agree that the oral hypoglycemic agents are drugs of convenience. They are convenient because they may be taken orally as opposed to the injections of insulin. More importantly, they are convenient because they do not require the self discipline and compliance inherent in a weight-reducing dietary regimen. In contrast to the effects of insulin in the patient with diabetic coma, the oral hypoglycemic agents are not life saving drugs. Furthermore, no convincing evidence is available which indicates that regulation of blood sugar by oral agents retards or prevents the long term degenerative complications of diabetes which may affect the eyes, kidney or nervous system. It is thus clear that these drugs are useful in a very limited number of patients with adult-onset diabetes: namely, those with symptoms due to an elevated blood sugar in whom dietary measures have failed and in whom insulin is impractical or refused by the patient. While some experts would include patients with an elevated blood sugar who are asymptomatic, there is universal agreement that these drugs are overprescribed in the United States.

All of the above was in fact well recognized before the UGDP study was reported. The effect of the UGDP has been to add evidence of a relationship between oral agents and increased cardiovascular mortality. This relationship has been considered conclusive by some, persuasive by others, and at the least possible by all, including the most severe critics of the UGDP. Given the fact that 1) these agents are drugs of convenience, 2) they are widely overprescribed, 3) they may increase cardiovascular mortality, and 4) that the practice of medicine is usually governed by the axiom "Primum non nocere" —"above, all do no harm," one may question whether the findings of the UGDP study have resulted in a change in the clinical treatment of diabetes. Unfortunately the answer is very definitely no! The most recently available data reveal that the total prescriptions for oral hypoglycemic agents *increased* 5.5% between 1972 and 1973. This represents a total of over 19 million prescriptions costing over $100,000,000 and involving over 1½ million patients.

Since all agree that these agents are overprescribed and at the least possibly toxic, it is apparent that the experts in the field of diabetes have failed to appropriately influence the clinical management of this disorder. To rectify this situation I would propose the following:

1. Leading proponents as well as critics of the UGDP study should meet for the purpose of issuing a joint statement in which the primacy of diet and the obvious need for restriction in the use of oral hypoglycemic agents is clearly spelled out. Such a statement can be divorced entirely from the UGDP study. It should be noted in this regard that the critics of the UGDP study often emphasize the limited indications and rarity with which they employ oral agents in their own

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DR. PHILIP FELIG, Professor and Vice Chairman, Department of Internal Medicine, Yale University School of Medicine.

The statement was presented to the Senate Committee on July 10, 1975.

practices. However, so long as such statements are immediately followed by a statement attacking or discrediting the UGDP, the end result is a perpetuation or exaggeration of the abuse of these agents which characterizes current medical practice.

2. Emphasis should be placed on dietary management rather than oral agents in the instruction of medical students and in postgraduate medical courses on the treatment of diabetes.
3. Research should be undertaken on developing improved methods of assuring patient compliance and success in adhering to weight-reducing diets.
4. Most importantly, the labeling of oral hypoglycemics should be changed to include:
   a. A warning that evidence has been reported that these agents may increase cardiovascular mortality; and
   b. That use of these agents should be restricted to adult-onset diabetics in whom dietary measures have failed and insulin is refused or impractical.

Mr. Chairman, there has been much discussion in the lay press and medical journals of the need to maintain the physician's freedom of choice in the treatment of his or her patients. I believe that our overriding concern as physicians is to do no harm. As experts in the field of diabetes our primary obligation should be to improve the lot of our patients by influencing current treatment practices rather than perpetuating a situation which is at the least wasteful and at worst causing an unnecessary shortening of life span in adult-onset diabetics.

NOTICES

THE UNIVERSITY OF CONNECTICUT HEALTH CENTER

The Microbiology Division of the Department of Laboratory Medicine is pleased to announce a Distinguished Lecture Series in Clinical Microbiology.

February 26, 1976, "Detection of Bacteremia", Dr. John Washington, II, Head, Section of Clinical Microbiology, Mayo Clinic, Rochester, Minnesota.

April 15, 1976, "Relating Microbiology to Changing, Clinical Needs", Dr. Paul Ellner, Director, Clinical Microbiology Service, Columbia-Presbyterian Medical Center, New York, New York

Time: 4:00 - 5:00 p.m.—Seminar Presentation
5:00 - 6:00 p.m.—Open Forum

Place: Keller Auditorium, University of Connecticut Health Center, Farmington.

Convenor: Dr. Richard C. Tilton, Associate Professor of Laboratory Medicine, Tel: (212) 674-2865.

Yale University School of Medicine
Office of Regional Activities and Continuing Education
announces a multi-disciplinary course in

FETAL MATERNAL MEDICINE

at
Yale-New Haven Medical Center
under the direction of
Orvan W. Hess, M.D.

Courses in perinatal monitoring and perinatology will be conducted at the Memorial Unit of the Yale-New Haven Medical Center during the academic year. The purpose of the program is to update knowledge in the rapidly expanding field of Maternal-Fetal Medicine. These conferences will be of interest to practitioners of obstetrics, pediatricians, nurses and others involved in perinatal care. Each complete course will consist of a series of conferences held on two separate days:

	Day I	Day II
Course I	Nov. 11	Nov. 18
Course II	Jan. 13	Jan. 20

The programs will include discussions on (1) Untra-partum monitoring with review and interpretation of current f.h.r. recordings, (2) Role of the Oxytocin Challenge Test, (3) Coagulopathy, Cardiomegaly, streptococcal infections, (4) Genetic counselling, (5) Bio-chemical assessment of fetal development and pulmonary maturity, (6) Real-time ultrasonography, echo-cardiography and fetoscopy, (7) Management of the neonate at high-risk, (8) Surgery of the newborn and (9) demonstrations of electronic apparatus and tours of the obstetrical and newborn intensive care units.

Faculty

Gerald Anderson, M.D., Richard Berkowitz, M.D., Debbie Fry, R.N., Jeryl Gagliardi, R.N., Ian Gross, M.D., Orvan W. Hess, M.D., Walter Hierholzer, M.D., John C. Hobbins, M.D., Nathan Kase, M.D., Stanley R. Lavietes, M.D., Maurice J. Mahoney, M.D., Cheng-Hock Seah, M.D., John H. Seashore, M.D., Robert J. Touloukian, M.D., Joseph E. Warshaw, M.D.

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Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

PHYSICIAN-PHARMACIST RELATIONSHIPS

To the Editor: The Joint Medical-Pharmaceutical Conference Committee as you know is made up of physicians and pharmacists who meet periodically to discuss and review problems arising in areas of common interest. While it hasn't occurred often, there have been several instances recently where a pharmacist and physician have each accused the other of unethical or unprofessional actions. These have rather proven to be simple thoughtlessness.

This prompts one to refer to the section on Interprofessional Relations of Guiding Principles for Physician-Pharmacist Relationships in Connecticut prepared by the Joint Committee ten years ago and still valid.

III. INTERPROFESSIONAL RELATIONS: Section 1. Questions of the Patient—Should a patient question the pharmacist concerning the physician's diagnosis or choice of drug, such questions should be referred to and answered by the prescribing physician. Should a patient question the physician concerning the specific price of a prescribed drug, such question should be referred to and answered by the dispensing pharmacist. It is the common goal of both professions to promote a feeling of warranted confidence in the patient that he is receiving the most appropriate and effective therapeutic agent possible, at a price commensurate with the nature and quality of the agent and the type and amount of professional service rendered by the pharmacist dispensing it.

Sec. 2. Disputes—Should a dispute arise between a pharmacist and a physician involving questions of ethics and/or professional conduct, the disputants should make every effort to resolve the problem between themselves—in confidence and in an amicable manner. However, should such a dispute remain unresolved it should be referred for arbitration to the professional organization in which the alleged offender holds membership. In matters of this kind, confidentiality should be observed by all parties until and unless all attempts at mediation through professional channels have failed and redress has been sought through overt legal action.

With pressures on both of us in these troubled times for medicine and its related professions it is incumbent for physicians and pharmacists to work more harmoniously than ever.

Bernard O. Nemoitin, M.D.
Chairman
The Joint Medical-Pharmaceutical Conference Committee

RURAL MATERNITY DEPARTMENTS

To the Editor: The article of Doctor Urabagilu Nagaraja in the August, 1975, issue of *Connecticut Medicine* seems to warrant some comment from me for a number of reasons. Primarily, I would like to add to the author's number of reasons for the continuation of obstetrical units by suggesting very strongly that the issue of morality be added to his considerations of economics and quality. There are within our country a large number of people who prefer to give birth within an institution where the life of the person is held very sacred by all staff members from the moment of conception until the actual moment of death. I speak not only of Catholic hospitals in this State and throughout the country; one should also include the many religious and non-religious hospitals whose staffs have voted not to allow abortions to be performed within their respective institutions. This is certainly a major consideration for many people as they choose a hospital for obstetrical care. A great deal of pressure is being placed upon hospitals to reduce or to eliminate their obstetrical services and I think that Doctor Nagaraja's article speaks eloquently to the value of a rural community hospital and I am sure that his article will serve as a valuable resource to hospitals as they try to defend their own prerogatives.

Nor should the readers of *Connecticut Medicine* feel that compassionate obstetrical care is available only within small rural community hospitals and I feel that the use of the term "larger factory type institution" inaccurately characterizes the work of dedicated obstetricians and nurses who have spent their careers in caring for the obstetrical patient within institutions which have always been large or which have grown significantly within the past few decades. Certainly these individuals render high quality care in a very compassionate manner.

Sister Mary Anne Fitzmaurice
Assistant Director
Saint Francis Hospital

The above letter was referred to Dr. Nagaraja, who offers the following reply:

To the Editor: I fully agree with Sister Mary Ann Fitzmaurice's concern about morality in the Catholic religion. As stated in her letter, it is important for people to choose where a baby should be born, either in a religious or non-religious hospital, where they have faith, belief and confidence in that particular institution. At the same time, the community people feel they have every right to have their babies delivered in their own community hospital.

I had the good fortune to work as a resident in one of the Catholic hospitals, and I was also in charge of unwed mothers while I was in training in the same hospital. I have a great deal of respect for the manner in which the Catholic institutions handle maternity patients. They are very sympathetic and concerned and no one can deny the devotion shown towards these mothers.

The term "larger factory type institution" should not be taken literally. This is not a general feeling but we all know some of the larger institutions provide better care because of their resources. The case is only to defend the smaller community hospital which usually takes care of its patients in a more personalized manner as everyone is known more or less in that particular community.

The present policy of Health Planning Councils giving support to centralized large hospitals in big cities and towns deprives the people in rural areas of the right to have proper health care in their own community. I urge all those interested in making health care available to all people to strive to encourage smaller hospitals built in every community.

Urabagilu Nagaraja, M.D.
New Milford, CT.

Connecticut State Medical Society members are invited to write to the Editor expressing their opinions or giving information on matters of mutual interest. The Editorial Committee reserves the right to select or reject communications.

The Regional Infant Cardiac Program

A Six Year Evaluation

Leon Chameides, M.D., Frank Galioto, M.D. and Donald C. Fyler, M.D.

The New England Regional Infant Cardiac Program was formed in 1969 for the purpose of improving cardiac care of infants in the six New England states. Ten hospitals (Table 1) in the New England region currently engaged in the diagnosis and/or surgical care of infants, are participating in the program. The program is funded by the Maternal and Child Health Service of the Health Service and Mental Health Administration through a grant to the Children's Hospital Medical Center which acts as administrative headquarters.

Table 1
NERICP - 1975
PARTICIPATING CENTERS

CONNECTICUT
Hartford Hospital—Hartford
St. Francis Hospital—Hartford
Yale-New Haven Hospital—New Haven
MAINE
Maine Medical Center—Portland
RHODE ISLAND
Rhode Island Hospital—Providence
MASSACHUSETTS
Boston Floating Hospital—Boston
Children's Hospital Medical Center—Boston
Massachusetts General Hospital—Boston
NEW HAMPSHIRE
Dartmouth-Hitchcock Medical Center—Hanover
VERMONT
Mary Fletcher Hospital—Burlington

The services provided by the program include the facilitation of transportation of sick infants to any of the centers including help with ambulance payment where needed. The program has enabled pediatric cardiologists, cardiovascular surgeons, nurses and social workers to get together three times a year in order to promote professional education and share experiences and problems. Among the greatest benefits has been the ability to collect regional data. In the past, reports of success or failure have always been highly selected. The data collected here has enabled a region to look at its statistics, to compare the results of individual institutions and it is the purpose of this paper to give a general review of the data accumulated in the past 6 years of the program.

Method

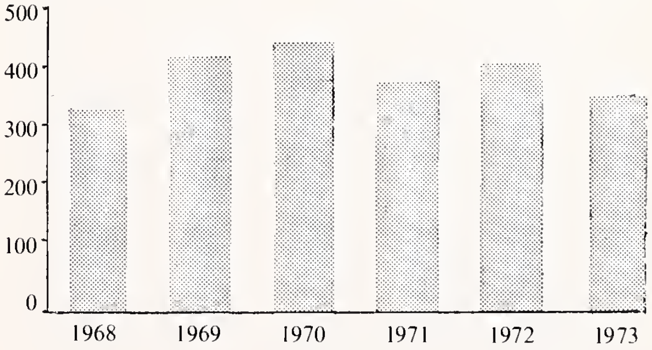
All infants born in New England who had heart disease of sufficient severity to require cardiac catheterization, cardiac surgery or who died prior to their first birthday, were labelled critically ill and were included in the study. Monthly telephone reports were made on new patients and twice a year, a physician associated with the program visited each hospital in order to review the charts and tabulate the data in detail. The information was then coded and stored on magnetic tape. Each infant was assigned one dominant diagnosis and any dextrocardia was considered a malposition regardless of any other cardiac problems. All non-cardiac problems were coded with respect to etiology and anatomic system involved.

Results and Discussion

Incidence

During the six years 1968-1973, a total of 2,311 infants who met the already mentioned criteria were born in New England and registered with the program. (Figure 1) The slight rise from 1968 probably represents the educational effect of the program and

NERICP - 1975
PATIENT DISCOVERY



TOTAL: 2311

Figure 1

DR. LEON CHAMEIDES, Director of Pediatrics, Hartford Hospital; Associate Professor of Pediatrics, University of Connecticut Health Center.

DR. FRANK GALIOTO, Assistant Director of Pediatrics, Hartford Hospital; Assistant Professor of Pediatrics, University of Connecticut Health Center.

DR. DONALD C. FYLER, Associate Chief of Cardiology, Children's Hospital, Boston; Associate Professor of Pediatrics, Harvard Medical School.

The following three papers were presented at the spring New England Pediatric Society meeting at the University of Connecticut Health Center, Farmington, CT, May 14, 1975.

Supported by Project #260 and MC-R-250197-02-0 Maternal and Child Health Service, Health Service and Mental Health Administration of the United States Department of Health, Education and Welfare, U.S. Public Health Service.

the fact that the 1968 statistics were obtained retrospectively. The decline in the last three years probably represents a decline in the total number of births. The overall incidence of critically ill infants born with congenital heart disease (Table 2) has averaged 2.1/1000 live births. There has been a slight rise in the incidence over the past three years from 2.04/1000 live births in 1971 to 2.27/1000 in 1972 and 2.38/1000 live births in 1973. This trend, which undoubtedly represents better case finding, will have to be carefully watched. As can be seen (Table 2), there is a considerable variation from state to state with a low of 1.50/1000 live births in Maine to a high of 2.31/1000 in Rhode Island. There is a direct relationship between this incidence and the population density thus indicating a problem in case findings in the less densely populated states, rather than a true difference in incidence. Our overall incidence of 2.1/1000 live births is lower than that found by Menashe[1] in Oregon or Carlgren[2] in Gothenburg, both of whom found the death rate alone to be 2/1000 live births.

Table 2

NERICP - 1975

INCIDENCE/1000 BIRTHS DISCOVERED

	1969	*1970*	*1971*	*1972*	*1973*	*Total*
Maine	0.98	1.90	1.58	1.46	1.60	1.50
New Hampshire	1.53	1.86	2.05	1.93	2.07	1.89
Vermont	1.28	2.56	1.56	3.14	2.61	2.23
Massachusetts	1.97	2.29	2.17	2.40	2.44	2.25
Connecticut	1.66	1.93	1.92	2.20	2.54	2.05
Rhode Island	1.94	2.19	2.37	2.45	2.60	2.31
Total	1.75	2.14	2.04	2.27	2.38	2.12

Age at Entry

The age at entry into the program is shown in Table 3. It should be noted that almost half (43%) of the infants were referred in the first week of life, another 41% were referred after the first month and only 16% entered the program between the first week and first month of life. This is probably partially due to the physiologic development of the pulmonary vascular bed, but is surely partially due to the timing of well child visits by pediatricians. As might be expected, the most common diagnoses in the first week of life were transposition of the great arteries and hypoplastic left heart syndrome which together, accounted for 30% of the infants seen below one week of age. After one month of age, the most common lesions were left to right shunts.

Table 3

NERICP - 1975

AGE AT FIRST ADMISSION

Year	*0-7 Days*	*8-30 Days*	*31-365 Days*	*Total No.*
1968	39%	20%	41%	338
1969	43	15	42	415
1970	43	15	42	421
1971	45	18	38	384
1972	45	13	42	399
1973	44	16	41	346
Total	43%	16%	41%	2303

Cardiac Abnormalities

Table 4 lists the ten most common lesions seen which together, represent more than 70% of our total experience. If one allows for differences in age, the figures are quite similar to those of Varghese et al.[4] and of Coleman.[5] From year to year, the frequency distribution remains quite constant. There are some unexplained differences such as the high incidence of hypoplastic left heart syndrome (10.1%) in 1971 and the low incidence (4.3%) of this lesion in 1972. The slight rise in the incidence of patent ductus arteriosus in 1970 and 1971 probably represents one center's particular interest in the patent ductus of small prematures during these years.

Table 4

NERICP - 1975

DISTRIBUTION BY DIAGNOSES

Diagnosis	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*	*Total*
VSD	14.4%	15.3%	11.9%	14.9%	16.2%	18.3%	15.1%
TGA	12.4	10.7	11.0	9.8	8.3	10.1	10.4
T/F	12.4	9.5	8.8	8.8	9.1	10.4	9.7
PDA	6.5	6.3	9.8	8.5	6.6	7.5	7.6
Hypo LV	7.9	6.8	8.6	10.1	4.3	7.2	7.5
Coarct	7.9	6.8	5.3	5.8	5.6	6.1	6.2
ECD	5.6	4.1	6.9	3.4	5.3	3.8	4.9
Malp	3.5	3.6	4.5	3.2	3.8	4.1	3.8
PS	2.3	2.4	3.3	4.2	6.3	4.1	3.8
Single V	3.5	4.6	2.4	3.2	2.3	2.3	3.1
Other	23.5	29.9	27.4	28.1	32.3	26.1	28.0
Total No.	340	412	419	377	396	345	2289

Associated Anomalies

Ten per cent of infants who have been followed for at least one year, were born with severe extracardiac anomalies which either could not be corrected (i.e., genetic disorders) or whose correction presented a major risk for survival (i.e., diaphragmatic hernia). Extracardiac anomalies were particularly associated with endocardial cushion defects (32.8%), patent ductus arteriosus and tetralogy of Fallot (11.5%). The surgical mortality, however, was independent of associated anomalies and this probably represents a selection process so that infants with severe extracardiac anomalies were probably not subjected to cardiac surgical procedures.

Low Birth Weight

Eleven per cent of all infants had a birth weight less than 5.0 lbs. (Table 5). During the same period, 7.7% of all infants born in New England had low birth weight. It can be seen that in agreement with previous observations,[6] infants born with anomalies which eventually result in left to right shunts have the lowest birth weights, whereas only 3% of infants with transposition of the great arteries are small at birth. Not unexpectedly, the highest incidence of low birth weights occurred in infants with patent ductus arteriosus.

Table 5

NERICP - 1975

LOW BIRTHWEIGHT (< 5.0 LBS.)

Lesion	*Total*	*LBW*	*% LBW*
PDA	152	42	27.6
VSD	304	43	14.2
Coarct	122	17	13.9
Pulm Sten	78	7	9.0
Single Ventricle	62	5	8.0
TOF	197	14	7.1
Malposition	74	5	6.8
Hypopl LV	148	8	5.4
TGA	204	6	3.0
Total	2,000	220	11.0

Outcome

Two thousand and one infants have been potentially followed for at least one year and the overall mortality was 40.8% (Table 6). It should be emphasized that this represents mortality from any cause. For example, an infant with a tracheoesophageal fistula who happens to have a small ventricular septal defect and who dies during the repair of the fistula, will be listed in the ventricular septal defect mortality statistics. Our statistics compare favorably with those of Varghese et al.[4] who found a mortality of 51% in 100 infants under one month of age who required cardiac catheterization and with Hurwitz[7] who reported on 114 infants under three months of age and found a cardiac mortality of 44%.

Table 6

NERICP - 1975

LAST DIAGNOSIS AND STATUS AT AGE 1 YEAR

Lesion	*Total*	*Dead*	% *Mortality*
VSD	301	43	14.3
TGA	204	86	42.2
TOF	197	54	27.4
PDA	152	19	12.5
Hypop LV	147	143	97.3
Coarct	122	57	46.7
ECD	104	48	46.1
Malposition	74	41	55.4
Pulm Sten	77	11	14.3
Single Ventricle	62	32	51.6
Other	561	282	50.3
Total	2,001	816	40.8

We became concerned several years ago at our overall mortality in infants with transposition of the great arteries. It must be emphasized that it is difficult to compare our total regional statistics with published series which are selected by those patients who reach a particular center. This is especially true for a lesion such as transposition of the great arteries with intact ventricular septum where the mortality is almost 100%, if the infant is left unpalliated. If the infants are divided according to age of referral (Table 7), it can be seen that the mortality is considerably higher in those infants who were referred in the first week of life than in those who were presumably healthy enough to have been referred during the second week. 83% of our infants are now referred in the first week (Table 8). If individual centers are examined, there appears to be some center to center difference in mortality but this is not related to the center size (Table 10). The mortality from this lesion has gradually been brought down to 36% in 1974 through a diligent educational effort and this is used as an example of what can be accomplished if figures for a region are critically examined.

Table 7

TRANSPOSITION OF GREAT ARTERIES

% MORTALITY AT INITIAL RASHKIND PROCEDURE

	1968	*1969*	*1970*	*1971*	*1972*	*Total*
Under 1 Week	60	30	58	30	11	37
Over 1 Week	36	20	53	0	0	29

Table 8

NERICP - 1975

TRANSPOSITION OF GREAT ARTERIES

AGE AT RASHKIND PROCEDURE

	1968	*1969*	*1970*	*1971*	*1972*	*1973*
1 Week	10	23	24	20	18	25
1 Week	11	15	15	5	6	5
Total	21	38	39	25	24	30
% 1st Week	48	61	62	80	75	83

Examination of the last known status of all infants (Table 9), shows that 42% are dead. Of those alive, 48% are either cured or hopeful of complete cure. Some of these infants (13%) have been palliated and await a second surgical procedure and some (20%) have required no palliation. Fifteen per cent have been cured either surgically (13%) or spontaneously (2%).

Only 7% of those remaining alive have no hope for a cure with current surgical techniques.

Table 9
NERICP - 1975
LAST KNOWN STATUS

Status	*No.*	%		
Cure Spontaneous	58	2	Cure 15%	Cured or Hopeful 48%
Cure with OP	296	13		
Hope with Palliation	297	13	Hopeful 33%	
Hope No OP	447	20		
No Hope with Palliation	87	4	No Hope 7%	
No Hope No OP	69	3		
Dead Cardiac	888	39	Dead 42%	
Dead Non Cardiac	72	3		
Lost	75	3		
Total	2289	100		

Table 10
NERICP - 1975
TRANSPOSITION OF GREAT ARTERIES
INITIAL SEPTOSTOMY BY CENTER

Center	*Total*	*Mortality %*
Large Center A	14	57%
Large Center B	31	29%
Large Center C	26	54%
Combined Small Centers	40	30%
Total	111	42.5%

Conclusions

Thirty-six years have passed since Gross[8] first surgically corrected a congenital cardiac abnormality. During that interval, many advances have taken place in the field allowing for better diagnosis and the correction of ever increasing numbers of congenital cardiac anomalies. How has this changed the overall outlook then for the infant unfortunate enough to be born with a cardiac anomaly? MacMahon[9] reviewed the life expectancy of all infants born in Birmingham, England, in the 1940's and Mustacchi[10] followed all infants born in San Francisco in the late 1940's through the 1950's. Figure 2 is a graph based on the above studies and starts out with a base of 1000 infants born with a cardiac abnormality. It can be seen that the three graphs start together and begin to diverge after one week of age. By one year of age, of the original 1,000 infants, only 350 were alive in Birmingham in the 1940's, 550 were alive in San Francisco in the 1950's and over 600 remained alive in New England in the 1970's.

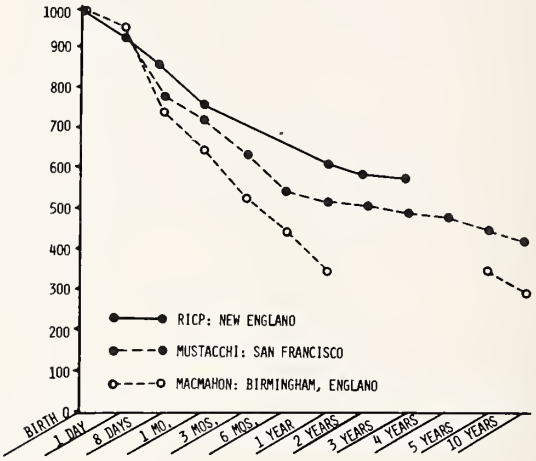


Figure 2

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Serum Complement in the Evaluation of Glomerulonephritis

Robert H. McLean, M.D.

Introduction

Renal diseases which are caused by immunologic mechanism account for approximately 90% of terminal renal failure. The complement (C) system is the most important mediator of tissue damage by immunologic mechanism and as such have been extensively studied in both experimental models of renal disease as well as in patients.[1] Certain laboratory tests of complement are now routine aspects of the evaluation of patients with kidney disease. It is the purpose of this paper to review the mechanism of complement activation, to mention the known biological functions of C and to focus on the possible role of C in renal diseases and the interpretation of C assays in renal disease.

The Complement System

The existence of the complement system was appreciated late in the 19th century. It was recognized that antibody and antigen, i.e. an immune complex, required the presence of a heat labile serum factor in order to be biologically active. This factor was initially termed alexine but subsequently called complement because of the complementary role to serum antibody. We now know that C is not a single protein but a complex system of 9 proteins which act in an exact sequence and have very narrow temperature, cation, concentration, pH and ionic strength requirements. The individual components of the complement systems have been purified and characterized. In sequence, the complement components include C1, C4, C2, C3 (B1C/B1A), C5, C6, C7, C8 and C9. C1 is composed of 3 subunits, C1r, C1s and C1q, which are held together by a calcium ion. Inhibitors of C1 and C3 are also well described and are of clinical importance.[2]

These C components comprise the classic complement system. The classic C system is activated by immune complexes with both IgG and IgM, but not IgA or IgE, possessing C activating activity. The most useful laboratory assay system of the classic C system is the total hemolytic C assay (CH50). In this test, sheep cells are the antigen and the antibody is anti-sheep red cell stromata (hemolysin). The end point of this assay is the destruction of the sheep red cells, i.e. cytolysis, and it has become customary to express the endpoint as the reciprocal of the serum dilution which results in the lysis of 50% of the available cells (i.e. CH50). CH50 is a test which depends upon normal activity of all 9 C components and as such is an excellent screening test of the classic C pathway. Biologically active C fragments are produced during the sequential activation of the C component. The third component (C3) is now recognized to occupy a key position in the complement system since opsonization (C3b), chemotactic (C3a, C5a, C567) and anaphylactic (C3a) fragments result from C3 activation. In addition, the recognition of an alternative mechanism of C activation which does not require specific antibody (as in the case with the early classic C component) for C3 activation has been described. Activation of this system, called the alternative or properdin pathway, may also result in the production of the biologically active fragment of C3 and later C components.[2]

The measurement of individual C components may be by either the use of specific antisera which yields a measure of the protein concentration or by the more tedious assay of biologic activity (using sheep red cells). Both systems yield important information but the former system is readily available in most hospitals for the measurement of C3 and C4. It is important to recall, however, that CH50 is a measure of all the C components while the more available C3 assay measures only C3. In most instances, C3 is a reliable indicator of hypocomplementemia but some diseases are now known to have C component abnormalities other than those of C3.

Serum C in Renal Disease

The detection of hypocomplementemia in a patient with renal disease is a significant finding. There are a limited number of renal diseases associated with hypocomplementemia.[3] The degree and the duration of hypocomplementemia as well as the components which are decreased are of help in the interpretation of this laboratory finding.

I would like to suggest that, in view of the above discussion of the C system, and of immunohistologic studies (not described in this review), we could classify glomerulonephritis as shown in Table 1.[4] This classification emphasizes that there is an apparent predominance of one pathway of C activation over the other in some diseases. Such a classification is useful to the extent that it directs our concepts concerning the pathogenesis of renal disease, but it should be emphasized that this is only a tentative classification.

Glomerulonephritis may be divided into three main categories: 1) glomerulonephritis due presumably to immune complexes, 2) glomerulonephritis due to

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DR. ROBERT H. McLEAN, Assistant Professor, Department of Pediatrics. Division of Pediatric Nephrology, University of Connecticut Health Center, Farmington.

antiglomerular basement antibody (there is an increasing number of renal diseases with anti-tubular basement membrane antibody either as an isolated or associated finding) and 3) glomerulonephritis that cannot readily be classified into either group (Table 1).

TABLE 1

CLASSIFICATION OF GLOMERULONEPHRITIS IN MAN

- Group 1. Presumed Immune Complex Diseases
  1. Classical C pathway glomerulonephritis with alternate C pathway involvement.
     - Systemis lupus erythematosus
     - Acute poststreptococcal glomerulonephritis
     - Glomerulonephritis associated with infections (shunt nephritis, SBE)
  2. Glomerulonephritis with primarily alternate C pathway involvement
     - Chronic membranoproliferative glomerulonephritis
     - Complement deficient states (C1r, C2 and C1 INH deficiency with glomerulonephritis
  3. Glomerulonephritis with unknown mechanisms of C involvement
     - Glomerulonephritis associated with idiopathic "mixed cryoglobulinemia"
     - Glomerulonephritis associated with haptene-complex
     - Membranous glomerulonephritis
     - Rapidly progressive glomerulonephritis (some cases)
     - Vasculitis (serum sickness)
     - Glomerulonephritis associated with neoplasia
- Group 2. Anti-glomerular basement membrane disease
  - Goodpasture's syndrome
  - Rapidly progressive glomerulonephritis
- Group 3. Unknown
  - Hemolytic uremic syndrome
  - Anaphylactoid purpura
  - Focal glomerulonephritis with recurrent hematuria

Group 1: Glomerulonephritis associated with presumed immune complexes.

By far most renal diseases fall into the first category. Immune complex glomerulonephritis in which there is evidence for both the classic and alternative C systems include systemic lupus erythematosus (SLE), acute post-streptococcal glomerulonephritis (AGN) and chronic infections.

SLE is the disease which has most clearly been shown to be due to immune complexes. Active renal disease is associated with depressed classic C components which is characteristic of C activation by immune complexes.[3,5] While C3 is an accurate reflection of active disease, depressed C4 may be noted initially in active SLE.[6] Serum C levels are an excellent parameter for evaluation of response to therapy in SLE.

Acute post-streptococcal glomerulonephritis has been noted to have decreased classic C components and closely resembles experimental models of acute immune complex injury.[3] Depressed C3 is noted in approximately 90% of all cases and represents an important diagnostic test. Unlike SLE, C returns to normal levels spontaneously in AGN, and should C remain low after 2 to 3 months, consideration of other diagnostic possibilities are necessary.

Both SLE and AGN, however, have been noted to have depressed levels of components of the alternative pathway. Properdin is low in both diseases[7] while Factor B is low in SLE [7,8] The significance of this finding is presently unclear but may represent an instance of a biologic amplification system. Activation of the classic C pathway may trigger the alternative pathway which then continues to activate C3.

Glomerulonephritis in association with chronic infection, particularly with subacute bacterial endocarditis and infected ventriculo-atrial shunts for hydrocephalus, are now recognized to be an immune complex induced glomerulonephritis which are curable following removal of the infectious agent.

The association of low serum C and membranoproliferative glomerulonephritis is a form of chronic glomerulonephritis which is characterized by depressed alternative C pathway factors and normal early C components.[7,8] This disease, which most likely is a heterogenous group of disease, would appear to represent primary activation of the alternative C pathway. Membranoproliferative glomerulonephritis is a slowly progressive disease in which successful therapy has not yet been described and in which we have even less information concerning etiology than for SLE or AGN.

The detection of an increasing number of patients with congenital deficiencies of early classic C components (C1r, C1s inhibitor and C2) in whom glomerulonephritis develops strongly supports the concept that activation via the alternative system has clinical importance.[10] In these C deficiencies, the absence of components which act prior to C3 rules out the possibility of classic C activation. The high incidence of infectious problems in C deficiencies has raised the interesting possibility that such patients might be more susceptible to as yet unidentified infectious agents which cause certain forms of glomerulonephritis.[9] Such agents may then trigger the alternative C pathway and results in renal tissue injury.

There is a growing list of glomerular disease with immunohistologic evidence of C involvement but in which serum C levels are normal or even elevated. At the present time one can only say that C may play a role in these renal diseases but its importance is unclear. The serum level of C always reflects the result of catabolism (or activation) and synthesis and some disease processes may not be sufficiently active to

TABLE 2

SERUM COMPLEMENT IN GLOMERULONEPHRITIS

Disease	*CH50*	*C3 (BIC/BIA)*	*Usual Course*
1. Acute glomerulonephritis (AGN)			
AGN-post-strep	↓↓	↓↓	Spontaneous return to Nl.
Focal glomerulonephritis	Nl.*	Nl.	—
Hemolytic-uremic syndrome	Nl. or ↓	Nl. or ↓	Spontaneous return (usually)
2. Chronic glomerulonephritis			
Rapidly progressive glomerulonephritis	Nl.	Nl.	—
Subacute bacterial endocarditis	↓↓	↓↓	Normal after therapy
Shunt nephritis	↓↓	↓↓	Normal after therapy
Membrano-proliferative glomerulonephritis	↓ or Nl.	↓ or Nl.	Variable
Systemic lupus erythematosus	↓↓	↓↓	Normal after therapy
Membranous glomerulonephritis	Nl.	Nl.	—
3. Idiopathic nephrotic syndrome	Nl.	Nl.	Decreased Factor B

*Nl. - normal

overcome the synthetic rate of C components. Such diseases as polyarteritis nodosa, cryglobulinemia and others may occasionally be associated with hypocomplementemia but this is an inconstant finding. Other mediators of tissue damage may be important in these diseases. Common C abnormalities of glomerulonephritis are summarized in Table 2.

Group 2:
Glomerulonephritis associated with anti-glomerular membrane antibody.

This small group of diseases is best characterized by Goodpasture's Syndrome. In this disease pulmonary hemorrhage and rapidly progressive glomerulonephritis coexist. An important laboratory finding is the presence of serum antibody against normal glomerular membranes and, on kidney biopsy, the patient demonstrates intense linear immuno-fluorescence for IgG along the capillary basement membrane. Serum C levels are normal in this entity despite glomerular C deposition in many patients.

Some patients with rapidly progressive glomerulonephritis (without pulmonary hemorrhage) may also have linear glomerular staining.

Group 3:
Poorly classified glomerulonephritis

In pediatric nephrology, focal glomerulonephritis associated with Henoch Schönlein purpura and the hemolytic-uremic syndrome (HUS) are important problems. The cause and pathogenesis of these diseases remain unexplained. Henoch-Schönlein purpura, however, characteristically is associated with elevated serum C levels. Although patients with the HUS syndrome may have depressed C levels, the significance of this is unclear. The diagnosis of the HUS syndrome, however, can usually readily be made because of the associated hematological abnormalities. The differentiations between HUS and other hypocomplementemic diseases should not be difficult. The evidence for a role of the coagulation system in this disease is strong but the etiology and exact pathogenesis is still to be defined.

The syndrome of recurrent hematuria, which is often gross, painless and following only a few days after an infection, is now well characterized by pathological and clinical findings. Serum C studies, with rare exception, are normal despite definite glomerular deposition of C3 as well as IgA and IgG. The etiology of this disease is presently unknown.

Summary

Decreased serum C is a significant laboratory abnormality which is very helpful in the evaluation and treatment of renal diseases. Diseases regularly associated with hypocomplementemia include SLE, post-streptococcal glomerulonephritis, membrano-proliferative glomerulonephritis and glomerulonephritis associated with infections. Recent studies have suggested that the classic C pathway is the main mediator in some diseases while the alternative C pathway is more important in others. Many forms of glomerulonephritis have immunohistologic evidence of participation of C in the pathogenesis of the disease yet serum C levels remain normal or elevated. C is an important mediator of tissue damage but other mediators, such as vasoactive amines and the coagulation system may be shown to have an even more important role in some disease than presently believed.

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Management of the Child with Cancer

Arnold J. Altman, M.D.

Neoplastic disease currently is second only to accidents as a cause of death in the 1-14 year age group. It has an incidence of 6.7 cases/100,000 population and results in approximately 4,000 deaths annually in the United States.[1] As great a tragedy as these figures represent, it is an even greater tragedy that many of these deaths are preventable. Recent advances in the field of oncology have resulted in a markedly improved outlook for children with many forms of cancer; however, these advances can be translated into improved survival statistics only if the primary physician detects cancer as early as possible, prevents early mortality from the complications of the neoplasm, and then allows his patient to be treated by a specialist in the care of children with neoplasia.

Role of the Primary Physician in Care of the Child with a Malignancy

Since the primary physician is generally the first person to evaluate and treat the child, his role is frequently critical in determining whether his patient will survive.

The clear correlation of survival with extent of disease at the time of diagnosis makes it imperative that malignancy be detected in its very early stages. For this reason, the primary physician must be alert to the possibility of cancer in any child with appropriate presenting complaints. Such complaints may be of three varieties:[2]

1) *Related to the tumor itself*—any mass not diagnosable by the characteristics of its location (thyroglossal duct cyst, dermoid cyst, etc.) should be considered potentially malignant. Such lesions should not be watched with the expectancy that they will disappear (except for inflammatory lymph nodes and hemangiomas). Generally the only way to prove or disprove malignancy is to biopsy the lesion.

2) *Symptoms referable to tumor*—e.g., unexplained bleeding from any site, localized pain or discomfort, obstruction to flow through body orifices, organ dysfunction.

3) *Nonspecific symptoms*—persistent low-grade unexplained fever, irritability, failure to thrive, weight loss. In this category one must also be aware that the symptom complex frequently characterized as juvenile rheumatoid arthritis (JRA)—fever, joint pains, splenomegaly, lymphadenopathy may be produced by occult malignancy. Consequently, the diagnosis of JRA should not be accepted until appropriate studies to rule out malignancy have been performed.

Once a malignancy has been diagnosed, initial management must be directed to complications of the disease if the patient is to survive long enough for specific antineoplastic therapy to be instituted (Table 1). Anemia, bleeding, and infection must be dealt with in a vigorous, effective manner. After appropriate cultures are taken, antibiotic coverage with gentamicin, methicillin and carbenicillin is begun if sepsis is likely present. A frequently unrecognized but potentially life-threatening problem is an elevated uric acid level resulting from breakdown of DNA from the rapidly proliferating tumor cells. Since uric acid may precipitate in renal tubules (especially in an acid environment) and lead to renal failure, hyperuricemia must be recognized early and treated effectively. Treatment consists of intravenous hydration, sodium bicarbonate therapy, and allopurinol (provided that the patient is not already in renal shutdown). If the patient is already in renal failure, appropriate measures such as fluid restriction and dialysis should be considered.

Role of the Cancer Center in Care of the Child with a Malignancy

The day is past when the "compleat physician" can diagnose and manage cancer of any degree of complexity entirely on his own; optimum therapy requires a judicious blend of surgery, radiation, chemotherapy, and immunotherapy. A cancer center must provide all these disciplines in sufficient breadth and depth to ensure that a program of maximum quality care can be formulated and carried out. Usually such a center functions as part of a regional university hospital, a large teaching hospital, or an independent cancer research institution. At the center the management program for each patient is usually determined at an organized therapeutic planning session where members of each discipline meet face to face in order to lay down guidelines for the course of treatment to be adopted. Such therapeutic regimens are most effective when instituted at the time of initial diagnosis of malignancy, for this time when we have the best chance for cure. The physician who utilizes the cancer center as a "court of last resort" when the patient has failed to respond or has relapsed on a suboptimal or outdated regimen has done his patient a great disservice. Likewise, the physician who diagnoses malignancy and decides to treat with a palliative regimen

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TABLE I

MANAGEMENT OF LIFE-THREATENING PROBLEMS IN CHILDREN WITH MALIGNANT DISEASE

Anemia:	Transfuse slowly with packed RBC (10 cc/kg) if hgb is < 7.0 or signs of congestive heart failure are present.
Hemorrhage:	1) Local pressure to bleeding site if possible.
	2) Determine etiology of bleeding diathesis (thrombocytopenia, liver dysfunction, disseminated intravascular coagulation, vitamin K deficiency, etc.) and institute appropriate corrective measures (platelet transfusion, fresh frozen plasma, or heparinization) after consultation with hematologist.
	3) Avoid intramuscular injections and deep venepunctures.
	4) Avoid drugs which interfere with platelet function (e.g., salicylates, antihistamines, phenothiazides, glycerol guaiacolate) as they may accentuate bleeding diathesis.
Fever:	1) Careful physical examination for site of infection.
	2) Appropriate x-ray studies.
	3) Cultures (throat, sputum, blood, CSF, urine).
	4) If patient is severely granulocytopenic, debilitated or immunosuppressed, parenteral antibiotic therapy* consisting of gentamicin (3-5 mg/kg/day-max. 240 mg/day), methicillin (200-400 mg/kg/day-max. 12-16 gm/day) and possibly carbenicillin (400-500 mg/kg/day-max. 20 gm/day) should be started while awaiting results of cultures.
Hyperuricemia: (serum uric acid >6 mg/100 ml)	1) Intravenous hydration (3000 ml/M^2/day).
	2) NaHCO3 (3-4 gm/M^2/day)-to raise urine pH to 7.0-7.5.
	3) Allopurinol (10-20 mg/kg/day).

*Modification of drug dosages (especially gentamicin) is indicated if renal failure is present. Consult official package circulars or Physician's Desk Reference for details of administration and side effects.

on the premise that "they all die anyway" is pursuing a course that is no longer medically or morally acceptable.

Treatment of Specific Malignancies

Acute Lymphocytic Leukemia (ALL)

Untreated, patients with ALL have a median survival of three months and fewer than 1% survive for one year. However, it is currently possible to achieve a median survival (free of disease) for five years in this disease by utilization of the following principles of management:[3] 1) rapid induction of remission with vincristine and prednisone, 2) prophylactic central nervous system treatment with irradiation and/or intrathecal methotrexate, and 3) continuous maintenance therapy with two or more antileukemic drugs.

1) Rapid induction of remission

The combination of vincristine and prednisone produces complete remission of disease within 28 days in approximately 90% of patients with ALL.[3] This regimen has the advantage of not only being quite effective, but it also has a remarkably low toxicity in comparison with other chemotherapeutic agents for malignant disease. The major side effects of vincristine are: peripheral neuropathy, hair loss (usually reversible), abdominal and jaw pain, and paralytic ileus. Prednisone therapy can result in hypertension, excessive weight gain, diabetes, gastrointestinal ulceration, and cushingoid facies. Significantly, neither of these drugs causes bone marrow suppression, a great advantage in treating patients whose blood counts are already suppressed by the basic disease process.

2) Prophylactic central nervous system treatment

When patients with ALL have prolonged remission of disease (1-2 years), over 50% of these remissions are terminated by the development of central nervous system (CNS) leukemia, usually in the form of leukemic meningitis.[4] The development of CNS leukemia probably means that the patient is no longer curable since bone marrow relapse usually follows within 2-3 months.

Postulating that CNS leukemia resulted from persistence of leukemic cells in the meninges (where they were protected from chemotherapeutic agents by the blood-brain barrier), Aur et al.[5] designed a protocol to eradicate leukemic cells in this so-called "sanctuary" area at a time when the patient was still in complete remission. They found that radiotherapy (2400 rads) to the cranio-spinal axis or a combination of cranial irradiation with intrathecal administration of methotrexate could lower the incidence of CNS leukemia to less than 10%. Moreover, this resulted in a much lower incidence of bone marrow relapse and a significantly longer disease-free survival time. It is from these studies that the optimistic prediction of a 50% disease-free five-year survival time for children with ALL derives.

Complications of such therapy includes: alopecia (usually reversible), growth retardation, bone marrow suppression and a transient mild encephalopathy accompanied by lethargy, vomiting, and low grade fever.

3) Maintenance therapy

The rationale behind this phase of therapy is that combinations of drugs with different modes of action produce additive destruction of leukemic cells, leaving fewer to develop resistance. Moreover, cells partially sensitive to one agent might be highly sensitive to a combination of drugs.

Combination chemotherapy with two or more drugs appears to be superior to sequential or cyclical administration of single agents. Most protocols include methotrexate, 6-mercaptopurine, and cyclophosphamide given in varying combinations and sequences. Possible long-term complications from chemotherapy include hepatic and pulmonary fibrosis, osteoporosis, sterility, growth suppression, and bone marrow suppression. Of major importance is the development of immunosuppression, frequently predisposing the patient to a variety of overwhelming infections with otherwise innocuous organisms. A recent report[6] states that 16% of leukemic children are currently dying (while in complete remission of their disease) because of infections with such organisms as fungi, pneumocystis carinii, cytomegalovirus, and varicella.

Now that a significant number of children with ALL are surviving for a prolonged period of time, the question has arisen as to how long maintenance therapy should be continued. In some centers all therapy is being discontinued after two to three years of complete remission. Although data are incomplete at this time it would appear that small numbers of relapses occur in these patients. However, relapse even after eight years or more of remission has been documented. Therefore it seems premature to consider children who have remained in remission for two to three years after medications have been discontinued as "cured." However, it does appear that as many as 25% of children with ALL may soon achieve this designation if they are allowed the benefits of the newer forms of treatment. Tragically, however, only 15% of children afflicted with ALL currently are being given the benefit of these recent advances at major cancer centers.[7]

Hodgkin's Disease

Hodgkin's Disease is the most common lymphoma in the pediatric age group and is a neoplastic disease in which great advances in therapy have been made in the past decade, resulting in an increasingly optimistic outlook for such patients. Prognosis, however, is still dependent on two major factors: histologic character of the tumor and stage of disease at the time of diagnosis.

Hodgkin's Disease is currently classified under four histologic types: 1) lymphocyte predominance, 2) nodular sclerosis, 3) mixed cellularity, and 4) lymphocyte depletion. Types 1 and 2 have the best prognosis while type 4 frequently runs a fulminant, unresponsive course.

Hodgkin's Disease is now staged according to the Stanford classification.[8] In most centers staging involves complete physical examination, chest x-ray, IVP, inferior vena cava gram, lymphangiogram, splenectomy, liver biopsy, and biopsy of selected abdominal nodes. Prognosis is clearly related to extent of disease at the time of diagnosis. As shown in Table II, Stage I (involvement of a single lymph node region) has an estimated five-year survival of over 80%, while Stage IV (multiple or disseminated foci) has only a 35% five-year survival. Stages II and III, which involve intermediate degrees of involvement, have an estimated five-year survival of 70% and 50% respectively.[9]

TABLE II

SURVIVAL BY STAGE FOR CHILDHOOD HODGKIN'S DISEASE[9]

*Stage**		*Percent Survival for 5 years*
I	Confined to single lymph node region	> 80%
II	More than one lymph node region involved but confined to one side of diaphragm	70%
III	Lymph node regions on both sides of diaphragm involved	50%
IV	Disseminated disease with organ involvement	35%

*May be substaged as A or B depending on the absence (A) or presence (B) of systemic symptoms (fever, weight loss, night sweats).

Radiotherapy has been the major mode of treatment for Stages I-IIIA. It is important to deliver an optimal dose (3,500-4,000 rads at 1,000 rads/week) in order to permanently eradicate any given site of involvement; smaller doses although temporarily resulting in regression of enlarged nodes, are frequently followed by local recurrences. For Stages IIIB and IV, combination chemotherapy (the so-called MOPP therapy of DeVita[10]) has been used. This regimen has resulted in suppression of Hodgkin's Disease in 70-80% of previously untreated patients and produced complete remission in 35% of Stage III and IV patients.

More recently regimens utilizing combinations of radiation therapy and chemotherapy have been designed for treatment of all stages of Hodgkin's Disease.[11] [12] Such regimens appear to achieve longer complete remissions than do single modality regimens.

Neuroblastoma

Next to brain tumors, neuroblastoma is considered to be the most common solid tumor in childhood. As seen in Table III, prognosis in this condition depends primarily on age and extent of disease at the time of diagnosis; other factors which also influence survival

TABLE III

TWO-YEAR SURVIVAL IN NEUROBLASTOMA BY STAGE[13]

Age	*Stage I* (Confined to site of origin)	*Stage II* (No longer confined to site of origin, but not crossing midline)	*Stage III* (Extending in continuity beyond midline)	*Stage IV* (Disseminated disease)	*Stage IVs* (See text)	Total
< 1 year	90%	88%	50%	24%	90%	71%
1-2 years	80%	63%	50%	0%	100%*	29%
> 2 years	67%	27%	17%	3%	50%	10%
Total Survival	84%	63%	33%	5%	84%	32%

*1 case only

are site of primary tumor and degree of differentiation of tumor. An important recent development is recognition of a special category of patients with metastases to subcutaneous tissue, bone marrow, or liver who may still have an excellent prognosis even without treatment, especially if they are under one year of age—such patients are classified at Stage IVS.[14] By contrast, once bone cortex is involved the prognosis is extremely grave and prolonged survival is rare.

Overall, the outlook for neuroblastoma patients is still not good, with less than one-third surviving for two years or more; the major factor influencing this poor prognosis is probably the fact that 70% of such patients already have metastases at the time of diagnosis.[13]

Among the unique features of neuroblastoma are:

1) The production of specific metabolites (catecholamines, vanillyl mandelic acid, homo-vanillic acid, metanephrine) which are excreted in the urine and can be monitored as an indication of tumor activity. An increased amount of these metabolites in the urine frequently heralds recurrence of the tumor at a time when it is not apparent on physical examination or by radiological studies.

2) The development of a bizarre movement disorder (opso-myoclonus) in 1-2% of patients with neuroblastoma; this may actually be the presenting feature of the disease. The course of this manifestation is extremely variable—it may persist even when all other manifestations of the tumor are absent or it may resolve spontaneously or in conjunction with ACTH therapy. Frequently these children are left with significant neurologic problems, particularly psycho-motor retardation. Despite the persistence of neurologic problems in these patients, most become long-term survivors.[16]

3) On some occasions a neuroblastoma may mature into a more benign histological cell type (ganglioneuroblastoma or ganglioneuroma). On other occasions the tumor may regress "spontaneously" due to necrosis. These mechanisms appear to be particularly relevant to the phenomenon of spontaneous regression of neuroblastoma in young infants.

Rhabdomyosarcoma

This highly malignant tumor arising from embryonic mesenchyme has an incidence close to, if not exceeding, that of neuroblastoma. It is not generally recognized as being so common, possibly because the initial pathologic diagnosis is incorrect in approximately 50% of cases, due to the ambiguity of its histologic features.[17] However, it has a characteristic electron-micrographic (E/M) appearance which is diagnostic. For this reason, a portion of tumor should be fixed in 2.5% glutaraldehyde at the time of biopsy so that E/M sections can be prepared in case a definite diagnosis cannot be made from routine histologic sections.

Sites of involvement vary from head and neck (orbit, nasopharynx, paranasal sinuses, palate, middle ear) to lower genitourinary tract and extremities. Common sites of metastasis are lung and bone.

Despite the highly malignant nature of the tumor and its previously poor prognosis, recent therapeutic regimens involving judicious surgery (usually wide local excision), high dose combination chemotherapy, and radiation therapy, have resulted in markedly improved survival data even in patients with widespread disease at the time of diagnosis. Using such a regimen, Wilbur and colleagues[18] found that 76% of 21 children with inoperable or metastic disease at onset were alive without evidence of disease for a period of 1-4 years. Because of the excellent results currently obtainable, especially in Stage I disease, radical surgery such as amputation of an involved limb is no longer indicated. Instead, wide excision of primary tumor with subsequent chemotherapy and radiotherapy should be employed.

Wilms' Tumor

Wilms' tumor or congenital nephroblastoma probably has the best prognosis for long-term survival of any of the major malignant disorders of childhood. Survival rate has been estimated to be as high as 80% by some authors;[19] however, some of these studies may include patients with mesoblastic nephroma, a benign renal neoplasm seen in infants in the neonatal period and up to six months of age, which in the past has been mistaken for Wilms' tumor.

The current mode of treatment combines removal of the involved kidney with radiotherapy to the tumor bed and chemotherapy with Vincristine, Actinomycin D, and sometimes Adriamycin. Children under 18 months of age with Stage I disease (well encapsulated mass not extending outside the kidney) may be treated with multiple courses of Actinomycin-D alone.[20] Elimination of radiotherapy for these patients does not appear to compromise remission duration or survival and it has the advantage of avoiding the skeletal deformities and secondary cancers produced by radiation.

The commonest site of metastasis is the lungs. However, unlike the case with most other tumors, even when pulmonary metastases are present it is possible to salvage many Wilms' tumor patients. Solitary pulmonary metastases should be removed by wedge resection; multiple metastases can be treated with radiotherapy and/or chemotherapy. It is most important not to give up on these patients as they are still potentially curable. Other metastatic sites include liver, bone and brain.

Since approximately 5-10% of Wilms' tumors occur bilaterally, both kidneys should be examined at the time of initial surgery.

Malignant Bone Tumors

Malignant tumors of bone and cartilage represent less than 1% of all malignant neoplasms; osteogenic sarcoma and Ewing's sarcoma comprise approximately 85% of the malignant bone tumors in patients below the age of 20. They account for a mortality of 1.87 per million children under 14 y.o. and 11.97 deaths per million people between 15-19 y.o.

Osteogenic sarcoma frequently involves the diaphysis (shaft) of long bones, but many involve the epiphysis (growing end) as well. The commonest sites of involvement in order of frequency are: distal femur, proximal femur, proximal humerus, tibia, pelvis, jaw, phalanges. Common metastatic sites are lung and bone. The majority of patients, even if treated with aggressive surgery, will develop pulmonary metastases within 6-9 months and the long-term survival has been poor (5-25%). Recently, however it has been demonstrated that the addition of adjuvant chemotherapy with Adriamycin and/or high dose methotrexate followed by citrovorum factor results in delay of appearance of metastases and produces more long-term survivors.[21] [22] Since this is a very toxic regimen, involving serious side-effects (mouth ulcers, bone marrow suppression), support with platelets and leukocytes must be available. At present this treatment program is only available at a few major centers.

Ewing's sarcoma originates in the diaphysis and may involve either trunk or extremity bones; it never primarily involves the epiphysis. Unlike osteogenic sarcoma where amputation or ablative surgery is a primary mode of treatment, Ewing's sarcoma is usually treated with a combination of radiotherapy and chemotherapy.[23] Because of the good response of this tumor to such measures, mutilative surgery is avoidable. The dose of radiation varies between 5000-6000 rads, encompassing the entire bone and a generous margin of soft tissue. Chemotherapy involves varying combination of Vincristine, Actinomycin D, Cyclophosphamide and Adriamycin. Utilizing these drugs in combination with radiotherapy, Rosen et al[24] have been able to achieve 10-37 month tumor-free survival in 12 of 12 patients.

Summary

In the past decade, great studies have been made towards the cure of many forms of childhood cancer. The impact of these advances on the management of children with acute lymphocytic leukemia, Hodgkin's disease, neuroblastoma, Wilms' tumor and malignant bone tumors has been discussed. The primary physician bears the burden of responsibility for early diagnosis of malignancy and recognition and treatment of life-threatening tumor-related complications (anemia, hemorrhage, infection, hyperuricemia). Optimum treatment, however, now requires a comprehensive multi-disciplinary approach which can best be obtained at a regional university hospital, a large teaching hospital, or an independent cancer research institution.

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Connecticut and its Cancer Center Regional Activities

Henry R. Mandel

Twelve months ago The National Cancer Institute (NCI) awarded Yale University School of Medicine a core grant to establish a Comprehensive Cancer Center at the Yale-New Haven Medical Center. This award, a result of the 1971 National Cancer Act signed by President Nixon, increased the Federal Government's dedication to the research and control of cancer. In May of 1974 the Yale University School of Medicine was designated as a Comprehensive Cancer Center for Connecticut as a participant in this Federal effort.

Nearly $10 million has been allocated to the Yale Cancer Center through NCI for research, training and construction. The mandate of the Regional Activities Office at the Yale Comprehensive Cancer Center (YCCC) is to facilitate the translation of this work into programs appropriate for the community hospitals and practicing physicians. The major objectives of the YCCC Regional Activities Office are:

1. Achieve a continuing, broad-based and coordinated focus of Statewide cancer activities (research, education and patient care) at various levels of participation, including:
    a. Cancer programs and activities in the affiliated hospital network, which have been developed through regional medical support.
    b. Non-affiliated agencies, institutions, physicians and other health and medical care providers.
2. Provide additional professional personnel and resources to:
    a. Enhance and expand the State cancer educational and training potential at the professional and public level.
    b. Develop demonstration projects, specifically in the areas of screening, diagnosis and patient care not otherwise possible.
3. Improve and accelerate the communication of research developments to the community.
4. Improve the access to and delivery of specialized cancer care, with emphasis on new research developments, patient referrals and screening detection programs.
5. Provide an evaluation mechanism for State cancer activities and increase research and epidemiological studies available to the cancer treatment institutions.

To accomplish these tasks, the YCCC Regional Activities Office will utilize the programs and staff at the Cancer Center and the National Cancer Institute Cancer Control Program. This latter program was established to speed the actual application of existing and emerging knowledge for the benefit of the patient. NCI has allocated approximately $50 million for the Cancer Control program nationally. Hopefully, the State of Connecticut will develop programs to receive its share of these funds.

The YCCC Regional Activities Office has helped to establish a State-wide consortium: The State Cancer Consortium was established during the first weeks of the Cancer Center, and consists of the Connecticut State Medical Society, Yale University School of Medicine, University of Connecticut School of Medicine, American Cancer Society, Connecticut Division, Inc., Connecticut State Department of Health and the Connecticut Hospital Association. The goals of this consortium were to: 1) coordinate cancer control programs throughout the State; 2) establish linkages between the YCCC and various cancer health delivery systems and; 3) develop a State plan for cancer services throughout Connecticut. In November, 1974, this committee launched, "Connecticut's Attack on Cancer," through a symposium for the media of Connecticut. On March 20, 1975 they continued this "attack" with a Cancer Control Planning Assembly, attended by over 250 medical professionals. Though not a perfect program, the Assembly did achieve a number of Cancer Center goals including:

a. Communicating with many individuals and institutions throughout the State and involving them in the initial planning of the YCCC Regional Activities Office and the approaches to be followed by the State Cancer Consortium.

b. Developing a State-wide Oncology-Hematology group consisting of over fifty physicians who will be meeting regularly to plan Cancer Center/community hospital and physician relationships.

c. Stimulating many ideas for communicating and developing programs throughout the State to

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HENRY R. MANDEL, M.S.W., Administrative Director for Regional Activities, Yale Comprehensive Cancer Center and Lecturer, Mental Health Administrator Department of Psychiatry, Yale University School of Medicine.

facilitate: 1) the setting of State priorities and; 2) the planning of collaborative programs.

The Regional Activities Office of YCCC will further its activities with the establishment of a State Communications Center sometime this autumn. In collaboration with the Consortium, the Communications Center will work with physicians, patients and families to provide easy access to knowledge concerning various aspects of cancer.

Since early detection is an important factor in successful treatment, the Communications Office in collaboration with The Connecticut Division of the American Cancer Society, will direct much of its education efforts to this area. Currently the Regional Activities Office disseminates information through mailings in collaboration with the Connecticut Hospital Association.

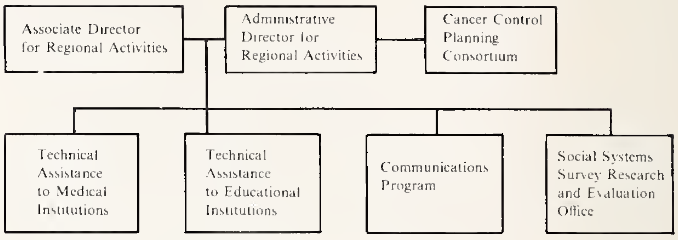
The Regional Activities Office in conjunction with the State Consortium submitted five proposals to NCI for the development of Cancer Control Programs. One program was for the expansion of chemotherapy at a community hospital, another was for the development of a saturation Education and Screening Program on a State-wide basis over a seven-year period. This latter proposal was funded July 1, 1975.

The Regional Office has developed programs with community hospitals. One program is for the development of an after-Care Unit and another for a coordinated Oncology Patient Program. These and other programs aimed at the psycho-social needs of cancer patients will disseminate knowledge at the community level and facilitate the application of research developed at the Cancer Center. To insure that we are carrying out our tasks and responsibilities to the Cancer Center and the community, we are mobilizing the best minds in the State. We hope that the Regional Activities Office will significantly influence the reduction of incidence, morbidity and death rate of cancer in Connecticut.

In recent months the Regional Activities Office at the YCCC has been working with the Consortium in two important directions. The first is the continuance and extension of the accomplishments of "Connecticut's Attack on Cancer" after the Cancer Control Planning Assembly.

The second area of work is in program development. To facilitate the continuation, expansion and evaluation of programs described in this article, the Regional Office of YCCC hopes to establish the following programmatic structure for regional activities:

YALE COMPREHENSIVE CANCER CENTER
REGIONAL ACTIVITIES OFFICE
TABLE OF PROPOSED PROGRAM ORGANIZATION


Associate Director for Regional Activities
Administrative Director for Regional Activities
Cancer Control Planning Consortium
Technical Assistance to Medical Institutions
Technical Assistance to Educational Institutions
Communications Program
Social Systems Survey Research and Evaluation Office

This structure hopefully will permit us to accommodate the needs of various institutions within the State.

Though the goals are extensive for these types of programs, they are consistant with our philosophy to see programs initiated outside the Yale-New Haven Medical Center walls. The Yale Comprehensive Cancer Center for Connecticut has the potential of becoming State-wide in its ability to serve the community if the programs outlined above are implemented.

The request for our assistance in the areas of program planning, implementation and evaluation are numerous. We hope to be working with State-wide groups of hematology/oncology physicians, oncology nurses, social service staffs, visiting nurses, dental assistants, industrial physicians etc., and providing these groups with continuing education programs and other types of service.

We plan to work with the State and City School Boards to develop a good Health Education Program which deals with the issues of cancer. Targeted health education programs (i.e. drugs, sex, diet) have not seemed to be as successful as integrated programs. The question before us is how will schools accept the issues of cancer into health education if they have not resolved other more "Popular" issues. It has been demonstrated that early detection and screening is greatly dependent upon attitudes developed about these procedures early in life. If a thirteen-year-old child is used to the concept of detection/screening/self-examination when he/she is probably not susceptible to cancer, than that individual is more likely to accept this routine later in life.

Yale University Center for Survey Research has shown that good drug education *has* effected drug use within the high school age population by slowing down its use by adolescents. This type of knowledge and experience should be useful in planning health education programs within school systems. Technical Assistance to Educational Institutions is another important way of reaching the adult (parent) population. Children can frequently foster education and participation of their parents in better ways than educational and health administrators or the medical professionals.

In addition to working with school boards, the Technical Assistance to Educational Institutions will include work with major health training institutions and allied health institutions in the area of program curriculum, on-the-job training and continuing education for practicing health professionals. These programs will be coordinated with the Regional Activities Office of the Yale School of Medicine.

The YCCC Regional Activities Office hopes to study all of its work during the first three years of its existence. The role of the Regional Office is to identify, field test, evaluate, demonstrate and promote the widespread application of work done in the research university and laboratory. Mechanisms need to be established to determine how effective we are in our stated tasks.

The purpose of the social systems research work will be to study the process of the Cancer Center as it attempts to coordinate its work on a horizontal and vertical inter-organizational matrix. Attempts will be made to identify conditions which minimize resistance to collaboration and maximize the management of conflict. We would hope that through this work we would be able to:

a. Summarize a theoretical model for understanding the structure and dynamics of the inter-organizational matrix established through the designation of a Cancer Center in Connecticut and the Cancer Control Program.

b. Identify the variables and combinations thereof, with a clear description of their effect upon the degree of coordination among organizations with the Cancer Center.

c. Make specific recommendations for federal, state and local officials concerning policies and procedures which appear to maximize effective management of conflict and to facilitate the creation and coordination of Comprehensive Cancer Services Network.

d. Look at issues concerning how the level of authority a Cancer Center is given relates to its ability to carry out tasks; how a Cancer Center can distribute resources and how organizations become or do not become affiliated with a Cancer Center.

Survey research questions will be developed through schools to study the attitudes of teachers, students and parents towards cancer. Theoretically these individuals should improve their knowledge of and change their outlook towards their disease, screening and self-examination. A number of schools will act as control groups after which populations will be compared to determine the effectiveness of our health education and public information programs.

A similar program will also be developed within specific communities selected from rural and urban, black and white, upper and lower socioeconomic status. The task of program evaluation will be to measure the effect that the various YCCC programs have on service delivery throughout the State. Does our Technical Assistance Office or our Communications Office improve health care? Do workshops succeed in their stated tasks to increase professional knowledge?

Through the implementation of the above programs we hope to better understand and satisfy the needs of medical and educational institutions. In addition, an on-going evaluation system will permit a measurement of effectiveness and facilitate appropriate programmatic changes for the improvement of services to the State of Connecticut.

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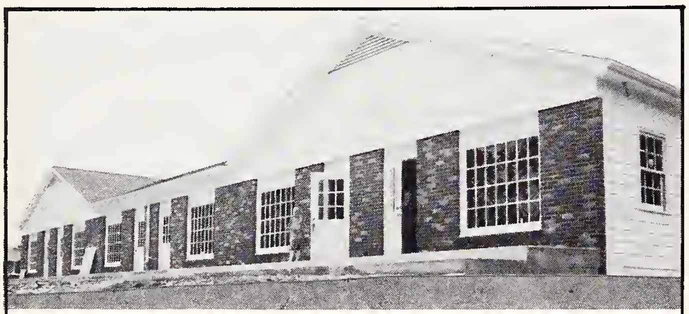

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Contraindications: In children less than 2 years, due to the decreased safety margin in younger age groups, and in patients who are jaundiced or hypersensitive to diphenoxylate HCl or atropine.

Warnings: Use with special caution in young children, because of variable response, and with extreme caution in patients with cirrhosis and other advanced hepatic disease or abnormal liver function tests, because of possible hepatic coma. Diphenoxylate HCl may potentiate the action of barbiturates, tranquilizers and alcohol. In theory, the concurrent use with monoamine oxidase inhibitors could precipitate hypertensive crisis. In severe dehydration or electrolyte imbalance, withhold Lomotil until corrective therapy has been initiated.

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Precautions: Addiction (dependency) to diphenoxylate HCl is theoretically possible at high dosage. Do not exceed recommended dosages. Administer with caution to patients receiving addicting drugs or known to be addiction prone or having a history of drug abuse. The subtherapeutic amount of atropine is added to discourage deliberate overdosage; strictly observe contraindications, warnings and precautions for atropine; use with caution in children since signs of atropinism may occur even with the recommended dosage. Use with care in patients with acute ulcerative colitis and discontinue use if abdominal distention or other symptoms develop.

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Dosage and administration: ***Lomotil is contraindicated in children less than 2 years old.*** Use only Lomotil liquid for children 2 to 12 years old. For ages 2 to 5 years, 4 ml. (2 mg.) t.i.d.; 5 to 8 years, 4 ml. (2 mg.) q.i.d.; 8 to 12 years, 4 ml. (2 mg.) 5 times daily; adults, two tablets (5 mg.) t.i.d. to two tablets (5 mg.) q.i.d. or two regular teaspoonfuls (10 ml., 5 mg.) q.i.d. Maintenance dosage may be as low as one fourth of the initial dosage. Make downward dosage adjustment as soon as initial symptoms are controlled.

Overdosage: Keep the medication out of the reach of children since accidental overdosage may cause severe, even fatal, respiratory depression. Signs of overdosage include flushing, hyperthermia, tachycardia, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils and respiratory depression which may occur 12 to 30 hours after overdose. Evacuate stomach by lavage, establish a patent airway and, when necessary, assist respiration mechanically. A narcotic antagonist may be used in severe respiratory depression. Observation should extend over at least 48 hours.

Dosage forms: Tablets, 2.5 mg. of diphenoxylate HCl with 0.025 mg. of atropine sulfate. Liquid, 2.5 mg. of diphenoxylate HCl and 0.025 mg. of atropine sulfate per 5 ml. A plastic dropper calibrated in increments of ½ ml. (total capacity, 2 ml.) accompanies each 2-oz. bottle of Lomotil liquid.

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455

Professional Standards Review Organizations (PSROs)—What Do They Mean To The Lawyer?

James G. Zimmerly, M.D., J.D., M.P.H. and
Edward R. White, M.D., J.D.

Introduction

PSRO is probably the most important health legislation ever enacted in the United States. Its capacity to improve quality of medical care is virtually unlimited. The program has the potential to be the backbone of all care rendered in the United States, to all citizens in any health care environment, including inpatient, outpatient, and nursing home care. As designed, the legislation was planned to be a cost and quality control program. Even this early in its implementation, it is turning out to be less of a cost control program and is now considered to be more of a waste control program. The expected benefits of this program include the improving of all aspects of medical care. PSROs are expected to perform in areas where physician education alone has failed. One such area is expected to be an improvement in physicians' drug prescribing habits. Drug utilization review is expected to be an important part of PSROs. With any new legislation that is expected to have such a major impact on one of the most important requirements of our Nation will come many problems, many yet to be recognized. Just as the need for health care affects all Americans, so will the PSRO legislation affect a large percentage of practicing attorneys. In light of this, it behooves the attorney to understand a little about the intent as well as the regulations prescribed by Section 249 F of Public Law 92-603.

Professional Standards Review Organization (PSRO) legislation was enacted into law as part of the Social Security Amendment of 1972. The legislation, PL 92-603, required that the Secretary of Health, Education and Welfare establish PSROs in every State by January 1974. The local PSROs are charged with determining whether care given to patients under Social Security is medically necessary and is given in the least expensive institutional setting appropriate to the patients needs, as determined by HEW. In some instances, physicians may be required to justify their medical decisions to their local PSRO in advance. The constitutionality of the PSRO legislation is currently being challenged in court.

History

The Professional Standards Review Organization legislation is Section 249 F of Public Law 92-603. As lawyers, we know the intent of the law may often be found in its history. As noted in the Congressional Record of July 1, 1970, Senator Wallace F. Bennett of Utah, author of the legislation, addressed the Senate and stated (excerpts):

"All of us are concerned over the multi-billion-dollar cost overruns in Medicare and Medicaid.

"The American People are justifiably concerned. Much of that concern is a very real feeling that we are not getting what we pay for.

"In mid-May (1970), I was contacted by staff members of the AMA who asked me to consider introducing a proposal to establish 'peer review organizations' to review doctors' services and charges under Medicare.

"The AMA plan was unduly limited (emphasis added) and a number of modifications, etc., were recommended by (our) (finance) committee staff.

"The key to making the present system (Medicare-Medicaid) workable and acceptable is the physician and his medical society.

"Careful and detailed study has indicated that the Federal Government *does not presently have* (emphasis added) the capacity to properly administer Medicare and Medicaid.

"The PSR proposal would provide physicians with an imaginative and exciting opportunity to review health care as a whole. It would scrap the piecemeal review activities of varying effectiveness that have prevailed since 1966.

"Utilization of all health care services is after all determined by the physician. (Their) direct services account for a small proportion of Federal Health Care dollar costs."

Senator Bennett's amendment did not succeed in 1970, but was passed with modifications in 1972. The Senator has defended his amendment on the Senate floor and elsewhere in 1974 as various elements of organized medicine have attacked it.

In the Congressional Record, Vol. 120, No. 45, of April 1, 1974, Senator Bennett stated (in defense of his bill):

DR. JAMES G. ZIMMERLY, Chief of the Division of Legal Medicine, Armed Forces Institute of Pathology, Washington, D.C.; Lieutenant Colonel, Army Medical Corps.

DR. EDWARD R. WHITE, Civilian consultant and Assistant Chief of the Division of Legal Medicine; Chief of the Malpractice Branch. Both are Professors of Law at Georgetown and George Washington Universities.

This paper was presented as part of the Section of Negligence, Insurance and Compensation Program of the annual meeting of the American Bar Association, Honolulu, Hawaii, August, 1974

"The PSRO legislation was designed to afford the practicing physicians at local levels an opportunity on a voluntary and publicly accountable basis to review the medical necessity and quality of care.

"It was intended to substitute responsible, comprehensive professional review by the community of physicians for the hit or miss review provided in less than effective fashion by government and insurance company personnel.

"PSRO repeal would not leave a review vacuum. Necessary review will be accomplished with or without PSRO provisions.

"A significant proportion of the health services provided under Medicare and Medicaid are probably not medically necessary."

The PSRO requirement was recommended by the Senate Finance Committee as a partial solution to the dual problems of rising health costs and suspected high incidence of medically inappropriate services rendered to Medicare and Medicaid patients. Existing utilization controls were allegedly inadequate as a result of:

Lack of program coordination.
Lack of professional participation.
Lack of professional support of review activities.
Restriction only to institutional care.
Reviews are often token in nature.

The PSRO law is to determine for purposes of Medicare and Medicaid reimbursement whether services were medically necessary and were provided in accordance with professional standards. Under the law, professional developed regional norms would serve as guidelines for review. It appears that the present PSRO law was prompted by a request from the AMA for cost review, a higher cost than was anticipated for Medicare and Medicaid, and the need to provide some protection for the elderly and the poor from rising costs of medical care.

The Senate Finance Committee, by investigation, determined the increased cost as due to over-utilization of health facilities and prolonged extended care cases.

Assuming these statements to be true, Congress intended for medicine itself, to police and restrict such costs. The medical profession has been told either they do it or the Government will!

There is little mention in the words behind the law of using PSRO to raise the standard of care patients would receive.

The law has been received with a mixture of confusion and hysteria. Objections from the medical profession include those relating to PSRO regional designations. Other objections are that the law is incompatible with quality care; doctor-patient privacy and current professional peer review.

Hospitals must comply with the law. They cannot exist without Federal funding. Hospitals and non-Government third parties must insist on PSRO modalities or cease operations. Compliance is to be preferred to suicide!

Operation of the Program

Local Organization. Under Section 1152 E of the Act, when the Secretary of HEW determines that a local physician organization is qualified to perform the PSRO functions required by law, he is required to notify the area's physicians and other health professionals by announcements in the local press, and mailed notices to physicians and hospital organizations active in the area. The notice will also be published nationally in the Federal Register. If more than 10% of the local area's doctors object to the proposed organization, a poll is required to be taken of all physicians in the area. This poll will be conducted to determine whether or not the designated organization is representative of the doctors practicing in the area. If more than 50% of the doctors responding to the poll indicate that the organization is not representative of the doctors in the area, the Secretary cannot enter into an agreement with that organization and must look for an alternative group. The potential for physician delay and foot-dragging on this aspect of the legislation alone is tremendous.

Once an organization is designated as the local PSRO and begins to apply the regional standards to measure the quality of patient care, the reviewers might spot cases of under-utilization as well as over-utilization. This could result in the program costing much more than anticipated. The kind of case of under-utilization that might be detected would involve an instance where the standards or norms would have determined that a certain procedure is essential to making a proper diagnosis, and in a given case the procedure may not have been performed in establishing the diagnosis. In that instance this case would be flagged and might well result in unnecessary procedures being performed.

Obligations of Health Care Practitioners

Section 1160 A (1) outlines those obligations of health care practitioners and other parties, including hospitals, and requires that services or items ordered or provided by such practitioner or other health care provider will be provided only when and to the extent medically necessary, and will be of a quality which meets professionally recognized standards of health care, and will be supported by evidence of such medical necessity and quality in such form and fashion and at such time as may reasonably be required by the PSRO in the exercise of its duties and responsibilities. There is a serious question on this section as to how arbitrary the PSRO may become.

Section 1157 provides that if a PSRO determines that a health care practitioner or hospital, or other health care provider, has violated any of the obligations imposed by Section 1160, that the violations will be reported to the State-wide Professional Standards Review Council, together with recommendations as to the action that should be taken. The State-wide Professional Standards Review Council will report the violations to the Secretary of HEW, together with any additional comments or recommendations deemed appropriate. Section 1158 provides for the withholding of Federal funds for health care services if such services have been disapproved by a PSRO as being unnecessary.

Section 1159 provides for a dissatisfied practitioner to request a reconsideration by the local PSRO, and where upon review the PSRO reaffirms its determination, and where the matter in controversy is $100 or more, the matter may be referred to the State-wide Professional Standards Review Council for their review and revision, if indicated. The practitioner may appeal the Professional Standards Review Council decision in matters in excess of $100, to the secretary of HEW, and where the amount in controversy is $1,000 or more, to a judicial review of the Secretary's final decision, after a hearing.

Sanctions

Sanctions provided against the aberrant practitioner can be quite severe. Section 1160 B (1) provides for permanent exclusion of the practitioner or provider from eligibility to provide services on a Federal reimbursable basis if the practitioner or provider has failed in a substantial number of cases to comply with any obligation imposed on him under the Act, or by grossly or flagrantly violating any such obligation in one or more instances, or has demonstrated an unwillingness or lack of ability substantially to comply with such obligations. In addition, Section 1160 B (3) provides that in lieu of the sanction authorized by paragraph B (1), the Secretary may require that (as a condition to the continued eligibility of such practitioner or provider to provide such health care services on a reimbursable basis) such practitioner or provider pay to the United States, in case such acts or conduct involve the provision or ordering by such practitioner or provider of health care services which were medically improper or unnecessary, an amount not in excess of the actual or estimated cost of the medically improper or unnecessary services so provided, or (if less) $5,000.00. Such amount may be deducted from any sums owing by the United States (or any instrumentality thereof) to the person from whom such amount is claimed. It would appear that a Federal tax refund could be withheld or deducted under this portion of the Act.

State-Wide Professional Review Councils: Advisory Groups to Such Councils: National Standards Professional Review Council

Section 1162 A of the Act provides that in any State in which there are located three or more local PSROs, the Secretary shall establish a State-wide Professional Standards Review Council. The membership of any such council for each State will consist of a minimum of 11 members, four physicians, two of whom may be designated by the State Medical Society, and two of whom may be designated by the State Hospital Association, and four persons knowledgeable in health care from such State, whom the Secretary will select as members representative of the public in such State, and one representative from and designated by each Professional Standards Review Organization in the State. The duties and functions of the State-wide Professional Standards Review Council will include coordinating the activities of the local PSROs within the State, assisting the Secretary in evaluating the performance of each PSRO, and assisting the Secretary in developing and arranging for qualified replacement PSROs when necessary.

Section 1162 E (1) provides that State-wide Professional Standards Review Councils for each State (or in a State that does not have such a council, the local PSRO) shall be advised and assisted in carrying out its functions by an advisory group of not less than seven or more than 11 members, made up of representatives of health care practitioners (other than physicians) and hospitals and other health care facilities that provide health care services within the State for which payment may be made under any program established by or pursuant to the PSRO Act. It is in the advisory groups that the nonphysician health care providers fit into the PSRO process and structure. They must be included as members of advisory groups to each PSRO council and PSRO in States with such council. In addition, they may be involved in the review process itself. In its implementing manual, the Office of Professional Standards Review, suggests that approximately one-half of such membership should be composed of practitioners, with at least one nurse and one pharmacist included in each advisory group. A dentist should also be included if outpatient dental services are reviewed by the PSRO in a particular State. The remaining members of the group should then represent those nonphysician practitioners who provide the greatest amount of service, or whose services represent special problem areas, under the programs reviewed.

Section 1163 A (1) provides for the creation of a National Professional Standards Review Council which consists of 11 physicians, not otherwise in the employ of the United States. Members of this Council serve for a term of three years and are eligible for reappointment. This National Council has the duty to advise the Secretary in the general administration of the Act, to provide for the development and distribution of data to local PSROs that will assist them in carrying out their duties and functions, to review the operations of the PSROs and State-wide Professional Standards Review Councils, in order to evaluate their effectiveness, and to suggest or arrange for studies to develop more effective measures for accomplishing the purposes and objectives of the Act.

Hospital Care and Physician Review

Under Section 1155 A (5), physicians participating in the review of hospital care must have active hospital staff privileges in at least one of the participating hospitals in the area served by the local PSRO. Reviewing physicians will be permitted to participate in the review of care and services provided in any hospital in which such physicians have active staff privileges. Physicians who do not have hospital admitting privileges for one reason or another, would seem to be ineligible to participate in the review of hospital cases.

Under Section 1155 A (6), no physician shall be permitted to review health care services provided to a patient if he was directly or indirectly involved in providing such services, nor will he be permitted to review health care services provided in, or by an institution, if he or any member of his family has even an indirect financial interest in such institution. "Family" is defined as including only the physician's spouse, children, grandchildren, parents and grandparents.

Under Section 1155 C provision is made to exclude the use of any reviewing physician who is not a duly licensed doctor of medicine or osteopathy in making *final* determinations in a PSRO. The question is whether a person other than a duly licensed doctor of medicine or osteopathy may make preliminary determinations. The Act would seem to permit an unlicensed professional, or other health care professional to indeed make *preliminary* determinations. Section 1155 D encourages promotion and publicity attendant to PSRO activities. Section 1155 G provides that only inpatient care will be reviewed by the PSRO unless the organization requests that the Secretary assign it the additional duty and function of reviewing other health care services. Upon the request of the local PSRO and the approval of the Secretary of HEW, the review can include all types of medical care, in outpatient as well as inpatient settings.

Existing Review Committees

The legislation does not allow for existing hospital utilization review committees to be accepted as an official PSROA Section 1155 E (1) provides for a PSRO utilizing the services of and accepting the findings of the review committees of a hospital or other operating health care facility or organization, located in the applicable area, when such existing review committee is able to demonstrate its capacity to effectively and in a timely fashion review activities in its facility. A hospital conducting such a review will be 1) required to perform admission certification, continued stay review and retrospective medical care evaluation studies; 2) allowed, for elective admissions, to exempt physicians, diagnoses or procedures from admission certification and continued stay review, if approved by the local PSRO; 3) required to perform admission certification of emergency admissions on a random sample or selected basis; 4) required to perform at least one medical care evaluation study (MCE) at any given time for which it may develop the criteria or standards and select the norms to be used; 5) expected to use the PSRO's norms, criteria and standards for admission certification, continued State review and profile analysis, and that the hospital can present the PSRO with valid reasons why these parameters should be modified for their particular institution.

It is entirely possible that certain review systems might actually improve the quality of care far beyond what any PSRO would presently require. The attitude of the PSRO proponents is that the program is compatible with the American Hospital Association (AHA) Quality Assurance, and the Joint Commission on Accreditation of Hospitals, Trustee, Administrator, Physician Programs, particularly in the area of medical care evaluation standards. If hospitals are willing to perform such review and will submit a plan for review that is acceptable to the local PSRO, then such delegation of review will be carried out. The PSRO, however, will continue to be responsible for assuring that the review performed by the hospital is effective. The PSRO will monitor and periodically evaluate the hospital's performance, and should the hospital fail to perform effectively, the PSRO would withdraw the delegation and conduct review in another manner.

It is worth noting that proposed regulations implementing the "HMO Assistance Act of 1973" (PL 93-222) contained significant implications for the evolving relationship between PSROs and HMOs. It is anticipated that any HMO quality assurance program will be required to meet the standards outlined in Section 1155 E of the PSRO, as well as other requirements for utilization review outlined in the Social Security Act.

Norms

Under Section 1156 A, each PSRO is to apply professionally developed norms of care, diagnosis, and treatment, based upon typical patterns of practice in its regions, as principal points of evaluation and review. If local standards or norms of care, diagnosis and treatment differ significantly from professionally developed regional norms, the local norms may be utilized, providing they are approved by the National Professional Standards Review Council. The norms with respect to treatment for particular illnesses or health conditions must include the types and extent of the health care services that are considered within the range of appropriate diagnosis and treatment of such illness or health condition, consistent with professionally recognized and accepted patterns of care. The norms with respect to treatment for particular illnesses must also include the type of health care facility that is considered to be the type in which health care services medically appropriate for such illness or condition can most economically be provided.

Section 1156 C provides for the National Professional Standards Review Council preparing and distributing to each local PSRO, materials indicating the regional norms to be utilized. All review organizations are required to utilize the norms developed under the Act as a principal point of evaluation and review for determining with respect to any health care services which have been or are proposed to be provided, whether such care and services are consistent with the criteria specified in Section 1155 A (1). Section 1156 D (1) provides for PSROs specifying the appropriate points in time following admission of a patient for inpatient care, at which time the attending physician must execute a certification stating that further inpatient care is medically necessary, and requiring that such certification include all information necessary to enable a PSRO to evaluate the medical necessity of the recommended further institutional health care.

A major point of conflict is concerned with where the PSRO criteria, norms and standards should be generated, and by what methodology they should be applied. The proponents of the Act are of the opinion that the law requires that the criteria, norms and standards emanate from the PSRO and not from the hospital, at least with respect to utilization review.

Confidentiality

One of the most emotion-provoking issues of this legislation has been the confidentiality of the information developed. This includes the medical record information and the information developed on health care providers and practitioners. The privacy of patients and physicians is a basic civil right that has always been recognized. Consumer groups are in favor of an open system of information that allows them access to the health care provider and practitioner records, while they recognize that private patient records are worthy of rigid protection from disclosure to protect the privacy and confidentiality of the patient. Confidentiality of patient records and confidentiality of physicians and hospital profiles are two separate and distinct issues. HEW appears to be working overtime in order to secure the complete confidence of patients records. The norms, standards and criteria, however, will undoubtedly be released for public consumption. In fact, Section 1155 A (3) requires that each local PSRO shall publish the types and kinds of cases with respect to which such organization will exercise its review authority. Section 1155 A (4) provides for the PSRO review to use methods of coding that will provide maximum confidentiality as to patient identity as well as assuring objective evaluation of the case. Profiles will also be developed and regularly reviewed with respect to each health care practitioner and provider to determine whether the care and services ordered or rendered are consistent with the criteria specified in the Act, i.e., that the services are or were medically necessary, that the quality of such services meets professionally recognized standards of health care, and that the appropriate medical care facility was selected for the type of medical condition requiring treatment.

Section 1156 A prohibits unnecessary disclosure of information developed under the Act, without insuring protection of the rights and interests of patients, health care practitioners and providers of health care. Section 1166 B provides a penalty for violation of the prohibition against disclosure of a $1,000 fine and/or imprisonment for up to six months. Section 1167 A provides immunity from civil or criminal prosecution to any person who provides information to a PSRO, unless the information is unrelated to the performance of the duties and functions of the PSRO, or the information is false and the person providing the information knew, or had reason to believe that such information was false. Section 1167 B (1) provides immunity from civil and criminal prosecution to members of employees of PSROs who act with due care. An individual acting with malice is not protected under this section. Section 1167 C provides immunity from civil liability for any person providing health care in compliance with reliance upon professionally developed norms of care and treatment applied by a PSRO, providing the physician or other provider takes such action in exercise of his functions as a provider of health care services, and provided he exercises due care in his professional conduct. This section does not really change the existing law of medical malpractice one bit. The physician is in no different straits, professionally liability-wise, in the presence of the PSRO legislation than he was in the absence of this statute. If he exercises due care and does not violate the standard of medical practice through any deviance from the norms of practice, he has a good defense to any malpractice charge. Such is the case under the existing law as well as under the new PSRO statute.

Effect of PSRO Legislation on Malpractice Litigation

Proponents of this legislation feel that it may help to ease the malpractice problem in a number of different ways. One expected benefit is that if a practitioner adheres to the PSRO criteria, and if the criteria are applicable to a particular case of alleged malpractice, then the practitioner has a good line of defense. It is also believed that it is only human nature for a person to do his best work if he knows that it is going to be reviewed by his peers. Finally, the PSRO organization is capable of outlining problems that would allow physicians to recognize potential malpractice hazards early and to deal with them more effectively.

Critics of the legislation claim that if a doctor fails to adhere to a PSRO criteria, it may be held against him in a subsequent malpractice action. Of course, a physician may vary from the criteria of care set up by his peers, but when a physician does risk this variance, he should have a good reason and a body of supporting well-documented evidence.

The late 1973 case of Gonzales vs Nork and Mercy Hospital of Sacramento has heightened the concern of hospital administrators over potential malpractice problems arising out of PSRO determinations, and hospital board liability for medical staff negligence. Judge Goldberg declared in his Memorandum of Decision in the Gonzales case that, "by virtue of its custody of the patient, the hospital owes him a duty of care; this duty includes the obligation to protect him from the acts of malpractice by his independently retained physician who is a member of the hospital staff, if the hospital knows, or has reason to know, or should have known that such acts were likely to occur." Section 1167 C (2) of the PSRO law would relieve hospital boards and physicians of civil liability for actions taken "in compliance with or reliance upon" PSRO norms of treatment, so long as they exercised "due care in all professional conduct." If the law would provide a defense to the physicians (both treating and reviewing) who adhere to the norms, the most logical question in the world is, "is deviance from the norms, therefore, prima facie evidence of malpractice?"

Further heightening the anxieties of hospital administrators is a recently completed report on "The Medical Malpractice Experience of Health Maintenance Organizations and Foundations For Medical Care," prepared by William J. Curran and George B. Moseley, III, from Harvard University. Studying a group of 12 HMOs, the researchers concluded that "comparing some very inprecise data on malpractice claims against HMOs with more reliable figures on the malpractice experience of the general population, compiled by the Secretary's Commission on Medical Malpractice, it appears that HMOs have proportionately more malpractice claims brought against them, make payments to claimants in a greater share of the cases, and make higher average payments in each case." These conclusions were hedged by the statements of certain HMO officials who believe that their malpractice claims experience was no worse than that of the general medical community. Nevertheless, any new legislation as far-reaching as the PSRO legislation must create concern in the medical and hospital communities.

Is He Dead? Should He Be Allowed to Die? Who Decides?

Lance Tibbles, J.D.

In years past, decisions about who lived and who died, as well as how long a person should be kept alive, were not as difficult or as important as they are today. Until recently, the decision was beyond human hands. Before the entrance of first antibiotics and later a multitude of "wonder drugs," anesthesia, blood plasma, and the so-called heart-lung machines, physicians had little need to ponder whether the patient might be better off dead. With injuries and acute diseases as the major foe, the physician's entire energies were spent in trying to save lives.

Later, the celebrated country doctor had additional medical tools and knowledge at his disposal, and likewise additional moral choices. As acute diseases were controlled, chronic diseases became more troublesome. The country doctor knew well his patients, their backgrounds, and their families. If ever there was a non-family member who was competent and trusted to make moral human value judgments for the individual and his family, it was the family doctor. For he had been there with the family in their triumphs and their defeats, in their agony and their elation. Births, deaths, injuries, sicknesses, recoveries, old age—the family doctor participated with them in all of it. When Granny in advanced years, with a full life behind her, became bed-ridden, terminal, and could no longer care for herself or recognize family members, the family doctor knew what course of treatment she and the family would want. Thus, if she could not recover and advanced medical treatment would only prolong her dying, the doctor wisely did not wage his fight against death to the limits of scientific advancement. Granny died at home with her family and without being connected to tubes, wires, graphs, gauges, and dehumanizing mechanical devices. She died despite the fact that full use of all tools of medical technology in a distant medical center could have prolonged her dying another day, another week, or another month. Only the doctor knew the final cause of death. He filled out the death certificate and the local undertaker, who had known Granny for 40 years, did not double check its accuracy.

But time never stands still and the scene has changed. Most Americans live in urban areas within the shadow of a high-rise, splendidly equipped hospital. Now there is no longer room nor activities in the urban housing scheme for the grandparents to remain with the children and grandchildren. Gone is the jack-of-all-trades family doctor. Which doctor sees you now depends on which organ system is malfunctioning. Last time it was a dermatologist, this time a urologist, next time a surgeon. The physician no longer knows you as the daughter of John and Mary, wife of Fred, mother of Susan and Carl, and a functioning member of the Jones clan. To him you are a case of kidney stones referred by Dr. Smith.

Dying is something that can no longer be done at home. Dying is now done in semi-public hospitals. The attendants at death are no longer the family members and the family doctor. This is a place of business. Family members are tolerated but not welcomed. The attendants at death are now interns, residents, attendings, medical students, staff specialists, nurses, and nurses aids. The orderly and the health insurance clerk are outside the door. The attending physician, if indeed he is present at all, is there not because of his long tenure of care for the patient and the patient's family, but because the final illness is a carcinoma rather than a coronary. If one of these strange physicians hastens the patient's death by active or passive measures, he must do so without knowing much about the patient, the patient's life style, or the patient's family. If he is to substitute his personal value judgments about a life worth living, he must do so with little pretense that it corresponds to that of the patient or of the patient's family. In addition, his treatment is subject to thorough scrutiny. His actions can be ascertained by autopsies, pathology reports, and records of drugs ordered. Other professionals in this busy place of business can observe his activity. Other physicians, house officers, interns, residents, nurses, social workers, and administrators are all in a position to observe his course of treatment. If any one of them is offended by his treatment or lack of treatment of the dying patient, they can complain to the hospital board, the local medical society, the state medical society, or the state prosecuting attorney.

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Whatever legitimacy there was for the family doctor to make decisions for death, when the patient died at home, that legitimacy does not exist for the specialist making the decision in a medical center. It is now time for the physician to give up his "Medicine Man's Burden." This Burden has two parts. (1) The physician and no one else must make the decision whether or not to allow a person to die. (2) The physician and no one else must decide when a person is dead, i.e., what is death. There are within each of these decisions questions which are not subject merely to medical scientific analysis. In addition, these two decisions are frequently confused. It is important to distinguish the question "Is He Dead?" from the question "Should He Be Allowed to Die?" Too frequently these questions are merged when deciding what should be done with a particular individual who has irrevocably lost some of the important signs of life. In fact, the new Kansas statute defining death, which has been heralded as a model for the future, and the Virginia and Maryland statutes that followed, appear to respond to the "Should He Be Allowed to Die?" question while purporting to answer only the "Is He Dead?" question.

A statutory definition of death is needed. The need for such a definition has been caused by (1) improvements in resuscitative and support measures leading to increased efforts to save those who are desperately ill or injured, and (2) the controversy about obtaining organs from "dead" or "dying" individuals for single organ transplants.

I reject the idea of multiple definitions of death, e.g., one definition for potential organ transplant donors and a second definition for those who are not potential donors. The idea of someone being more dead than someone else merely because he has some harvestable parts, does not make a case to the common man of the objectivity of medical science.

I do not agree that the criteria for death, in addition to the applications of the criteria to specific cases, should be left exclusively to physicians. It is true, however, that we must clearly distinguish between (1) the concept of death, i.e., the philosophical and physiological understanding of that which is essentially significant to man's nature, and (2) the criteria for death, i.e., the technical measures of the capacity of a body organ or organ system to function.

For example, the Harvard Ad Hoc Committee to Examine the Definition of Brain Death in 1968 established operational criteria for what it called irreversible coma, based on four scientific criteria. What the Harvard Ad Hoc Committee did not do was establish that an individual in irreversible coma is "dead," i.e., that we should treat him as if he were no longer a living human being who is the possessor of the same human moral rights and obligations as other human beings. It may be true that a patient in irreversible coma according to the Harvard criteria, should no longer be considered to be alive. But the decision that he is "dead" cannot be derived from any amount of scientific investigation and analysis. The choice of what is essential to the nature of man, and therefore, the loss of which is to be called "death," is essentially a philosophical or moral question, not a medical or scientific one. Some physicians state that to make "brain death" the legal definition of death brings the law up to date with what medicine has known all along—that the only death is brain death. Those physicians who know this, know it from their general beliefs about what is valuable in life, and not from their training and experience as medical scientists. The claim that death occurs when the brain dies, is not and cannot be medical opinion. To abdicate such decision-making to the scientifically trained professionals is societal irresponsibility.

Legislation has been introduced in about 15 states relating to terminating life. However, no state has yet enacted such a bill. I have classified these bills into three categories: voluntary active euthanasia, refusal of treatment, and death with dignity/living will.

The active euthanasia bills authorize direct action to terminate life. The authorization is effective some period of time, usually 30 days, after a written declaration is filed. Euthanasia is usually defined as the painless inducement of death. Usually the declarant must be 18 years of age or over. To qualify for voluntary active euthanasia, the declarant must have an "Irremediable Condition," which is usually defined as: (1) an incurable and terminal serious physical disability, or (2) brain damage or deterioration severely and irreparably impairing normal mental facilities and rendering the person incapable of leading a rational existence.

The declarant's decision to file the declaration is prospective, but the declaration provides for a later ad hoc decision by the individual; if the individual is incapable of giving directions, then the ad hoc decision is at the discretion of the spouse, relatives of the first degree of kinship, or the physician in charge of the case, in that order. The physician has a great deal of secondary authority. He identifies the existence of the irremediable condition, he ascertains whether the declaration was voluntary and in accord with the patient's wishes at the time euthanasia is to be performed, and he interprets the vague words in the bill, e.g., "serious physical disability," "incurable and terminal," "no expectation of regaining health," "incapable of leading a rational existence," "severe distress," "incapable of giving direction," "active

main purpose of drug information for the patient is to get his cooperation in following a drug regimen.

Preparation and distribution of patient drug information

We would hope to amass information from physicians, medical societies, the pharmaceutical industry and centers of medical learning. The ultimate responsibility for uniform labeling must, however, rest with the Food and Drug Administration. There is nothing wrong with this agency saying, "this information is generally agreed upon and therefore it should be used," as long as our process for getting the information is sound.

Distribution of the information is a problem. In great measure it would depend on the medication in question. For example, in the case of an injectable long-acting progesterone, we would think it mandatory to issue two separate leaflets—a short one for the patient to read before getting the first shot and a long one to take home in order to make a decision about continuing therapy. In this case, the information might be put directly on the package and not removable at all. But for a medication like an antihistamine this information might be issued separately, thus giving the physician the option of distribution. This could preserve the placebo use, etc.

It is in the distribution of patient information that the pharmacist may get involved. As professionals and members of the health-care team and as a most important source of drug information to patients, pharmacists should be responsible for keeping medical and drug records on patients. It is also logical that they should distribute drug information to them.

Realistic problems must be considered

We have to expect that the introduction of an information device will also create new problems. First, how can we communicate complex and sophisticated information to people of widely divergent socioeconomic and ethnic groups? Second, what will we say? And third, how can we counteract the negative attitude of many physicians toward any outside influence or input? Hopefully the medical profession will respond by anticipating the problems and helping to solve them. Assuming we can also solve the difficulty of communicating information to diverse groups throughout the United States, our remaining task will be the inclusion of appropriate material.

What information is appropriate?

In my opinion, technical, chemical and such types of material should not be included. And there is no point in the routine listing of side effects like nausea and vomiting which seem to apply to practically all drugs, unless it is common with the drug. However, serious side effects should be listed, as should information about a medication that is potentially risky for other reasons.

Other pertinent information might consist of drug interactions, the need for laboratory follow-up, and special storage requirements. What we want to include is information that will help increase patient compliance with the therapy.

Positive aspects of patient drug information

Labeling medication for the patient would accomplish a number of good things: the patient could be on the lookout for possible serious side effects; his compliance would increase through greater understanding; the physician would be a better source of information since he would be freer to use his time more effectively; other members of the health-care team would benefit through patient understanding and cooperation; and, finally, the physician-patient relationship would probably be enhanced by the greater understanding on the part of the patient of what the physician is doing for him.

Only the doctor can remove that fear by 20 or 30 minutes of conversation.

I'm not suggesting that we withhold any information from the patient because, first of all, it would be totally dishonest and secondly, it would defeat the very purpose of the insert. I do think that a patient on the birth control pill should know about the incidence of phlebothrombosis.

If you're going to tell a patient the incidence of serious adverse reactions, then you have to tell him that a concerned medical decision was made to use a particular medication in his situation after careful consideration of the incidence of complications or side effects.

Emotionally unstable patients pose a special problem

There are patients who, because of severe emotional problems, could not handle the information contained in a patient package insert. Yet if we are going to have a package insert at all, we just can't have two inserts. I think we might simply have to tell the families of these patients to remove the insert from the package.

Legal implications of the patient package insert

Just what effect would a patient package insert have on malpractice? We could try to avoid any legal implications by pointing out that the physician has selected a particular medication because, in his professional judgment, it is the treatment of choice. For instance, you can't tell everyone taking antihistamines not to work just because a few patients develop extreme drowsiness which can lead to accidents. And what about the very small incidence of aplastic anemia rarely associated with chloramphenicol? If, based on sensitivity studies and other criteria, we decide to employ this particular antibiotic, we do so in full knowledge of this serious potential side effect. It's not a simple problem.

How do we handle an insert for medication used for a placebo effect?

With rare exceptions, physicians no longer use medications for a placebo effect. This question does raise the issue of how a patient may react to receiving a medication without a package insert.

Preparation of the package insert

The development of the insert ought to be a joint operation between physicians, the pharmaceutical industry, the A.M.A. and the F.D.A.

I view the A.M.A.'s role as a coordinator or catalyst. It is the only organization through which the profession as a whole, irrespective of specialty, can speak. It has relatively instant access to all the medical expertise in this country. And it can bring that professional expertise together to ensure a better package insert. The A.M.A. can work in conjunction with the industry that has produced the product and which is ultimately going to supply the insert.

I don't think we should rely, or expect to rely, on legislative committees and their nonprofessional staffs to make these decisions when it is perfectly within the power of the two groups to resolve the issues in the very best American tradition—without the government forcing us to do it. I think the F.D.A. has to be involved, but I'd like them to become involved because they were asked to become involved.

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steps," "no resuscitatory techniques," and "prolong my life or restore me to consciousness."

Voluntary active euthanasia bills are basically permissive in that they authorize medical personnel to provide euthanasia, but they do not require that the physician comply with the patient's request. However, the physician is frequently compelled to notify the county board of health when the physician or institution refuses to act and to compel the board to make arrangements to carry out the patient's wishes. Every bill contains a specific protection of physicians who act under its provisions.

The refusal of treatment bills authorize the individual to refuse life-saving medical treatment, which is described variously as: "artificial, extraordinary, extreme, or radical procedures to prolong life," "treatment designed solely to sustain life processes," and "treatment to prolong life through artificial means." A slight majority of the bills provide that a written declaration refusing these treatments can be filed by a person who is "terminally and incurably ill and enduring severe pain and suffering," "terminally ill," or "is in care of a physician or hospital." The remainder of the bills do not require that this condition exist at the time of filing a declaration, but that is must exist before the authority to refuse treatment becomes effective. In about one-half of the bills, patient's agents are authorized to act for the individual when he is unable to do so.

Usually it is the physician who interprets the vague words describing the individual's condition, e.g., "no reasonable expectation of recovery," and also describing the treatment that can be refused, e.g., "maintenance medical treatment." In all but one bill there is no requirement that the physician comply with the individual's request. These bills are designed to give legal protection to physicians who withhold treatment under the conditions set out in the bills.

The bills based on the patient's right to refuse life-saving treatment have the advantage of being based on a right that has already received substantial legal recognition. They have the drawback of seeming to limit the patient's right to refuse all medical intervention, to refusing only "life-saving" intervention.

The death with dignity/living will bills give the individual the "right to death, or to die with dignity," or the right to "refuse artificial means or heroic measures," or state that "life is not to be prolonged beyond the point of meaningful existence." Unlike the refusal of treatment bills, the death with dignity/living will bills do not authorize the patient to refuse treatment. Instead, they merely state a philosophical conclusion that a person has a right to die with dignity or a right not to have his life prolonged beyond meaningful existence. These bills are extremely vague about (1) who has these rights, e.g., does the individual have to suffer from an irremediable condition? (2) the conditions which bring the bills' provisions into effect, and (3) the treatment that can be refused.

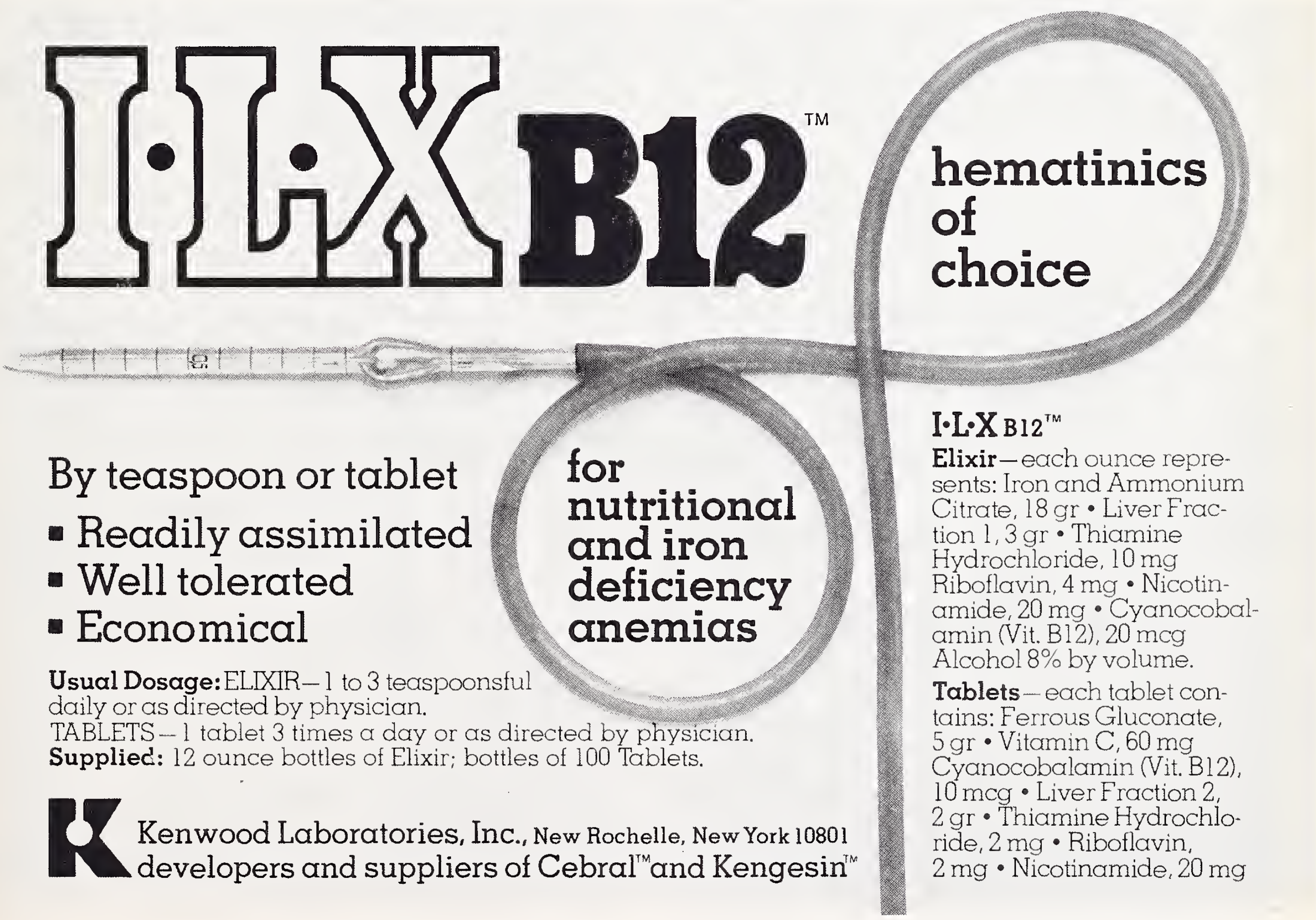
The physician has the initiative and it is the physician, not the individual, who makes the decisions. There is no requirement that the physician recognize the individual's living will. In one bill, the provisions for allowing the patient to die are not effective unless the patient can no longer actively take part in decisions for the future. Apparently if he can make decisions, he is not allowed to decide to die with dignity.

I do not believe that any of the pieces of proposed legislation which I have examined are sufficient to merit enactment at this time. The basic thrust of most of the bills is to provide the physician with protection if he complies with the provisions of the bill. This is necessary, but it is not sufficient. Most of the bills are much too vague to give the individual any assurance that his philosophy in regard to requesting active steps to bring his life to an end or to refusing treatment designed solely to prolonging his dying will, in fact, be carried out. Existing bills are not sufficiently clear on the three important questions, "who," "when," and "what."

I start my analysis of prolonging life from the premise that every competent adult has or should have the right to refuse any medical treatment, including life-saving treatment. This analysis seems preferable to focusing upon some other person's actions or inactions. Refusal of treatment per se should not be considered as evidence of legal incompetency. The decision should be placed to the extent possible in the hands of the individual. The next most appropriate person is an agent appointed by the individual for the sole purpose of making medical treatment decisions when the individual is no longer competent to do so. Decisions for death should be made as much as possible on an ad hoc rather than on a prospective basis. Decisions made years in advance specifying the precise conditions under which the individual will refuse precise treatments are not very helpful.

There are three difficult issues to be confronted. First, what about those individuals who have never been legally competent to make decisions, are not competent now, and never will be competent, e.g., severely defective newborns? Second, should positive active killing be legitimized in addition to a clarification of the right to refuse life-saving treatment? Third, should society authorize an individual to choose either active euthanasia or refusal of life-saving medical treatment when he is not dying? By dying I mean that there is a specific irreversible, progressive disease or condition even with the medical intervention, but the intervention will prolong the dying process for a limited period of time. For example, a patient undergoing renal dialysis is not dying because the treatment can arrest the irreversible, progressive condition. But if the individual finds that the life-saving treatment itself causes his life to be unbearable, it is impossible to intervene to make the life bearable without producing the individual's death. Should such an individual be permitted to have medical personnel assist him in refusing further treatment?

Under my standard of placing the decisions as much as possible in the hands of the individual, the physician will be an adviser but not a codecision-maker. This policy will require a greatly expanded notion of Informed Consent and will require a substantial change in the attitude in which many physicians view their patients. It will be necessary for physicians to view patients as decision-makers. Physicians will have to learn how not to homogenize their medical judgments with economic, philosophical, phychosocial, religious, legal, and personal points of view. Otherwise patient decision-making will be a fiction.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Medical Staff-Hospital Relations

The Council on Medical Service joined with the Council on Medical Education in a Joint Report (A-75), "Full-Time Program Directors and Chiefs of Service—Resolution 83 (A-74)."

It is the purpose of this report to deal more directly with the possible difficulties to hospital medical staffs resulting from control exercised by governing boards' appointment of salaried or nonsalaried department heads and salaried or nonsalaried chiefs of staff. The subject of salaried physicians was one section of Substitute Resolution 83 (A-74). In its preparation of this report, the Council utilized earlier work performed by its Committee on Private Practice.

This report deals with some current misconceptions about the *Darling* case, the need for medical societies to develop expertise in the art of negotiations, recommendations of the American College of Hospital Administrators and of the Catholic Hospital Association concerning medical staff structure and medical staff-administrator-board relations, and the role of private practitioners and salaried physicians on hospital staffs. Nine recommendations are presented.

In Resolution 83 (A-74), as introduced by the Connecticut Delegation, an excerpt from a speech by an AMA staff member on "Hospital Governing Board and Medical Staff Relationships" was quoted as follows:

"The developing trend on the part of some hospital governing boards to attempt to exercise direction and supervision over staff physicians in reliance on the *Darling* case is widespread enough to be of grave concern. In some of these hospitals, such control is exercised by the governing board's appointing salaried department heads, salaried chiefs of staff, and a medical staff executive committee of salaried physicians. The members of the attending staff then become subject to the direction of the salaried physicians. Under these circumstances, the medical staff is not self-governing and has no separate existence as the deliberative medical body."

The Council would point out that the AMA's adopted Report on Physician-Hospital Relations, 1974, described the fallacies that have grown up about the *Darling* case and set forth in clear perspective the nature of governing board responsibility with regard to the quality of professional services.

In the same speech that was quoted by Resolution 83 (A-74) as introduced, the author also drew analogies between attending physicians and salaried employees of hospitals. These analogies illustrated the thesis that there are enough "employee' characteristics to the rules and regulations that the attending physician must abide by to entitle hospital medical staffs to use strong, legally protected, economic weapons in "labor disputes" and in these disputes to be exempt from the application of the Sherman Antitrust Act.

The settlement of "labor disputes" involves the art of negotiation, which is the essence of collective bargaining. Since generally physicians are inexperienced in the art of negotiation and mediation, they need a team of experts to assist them if medical care is not to be institutionalized.

The provision of such expertise should be the role of organized medicine, with county and state medical societies providing the counseling and legal expertise and with AMA participation. Such counsel and legal advice can both assist medical staffs in areas where their complaints concerning medical care institutionalization are legitimate and advise them where their performance has been lax.

In such negotiations, the policies of the AMA as set forth with explanatory test in the Report on Physician-Hospital Relations, 1974, will provide common-sense guidance. The policies and text provide a balance between the rights and the responsibilities of medical members, both individually and collectively, in teaching and nonteaching institutions. Guidance is provided for protecting not only the rights of attending physicians but of employed physicians as well.

Of particular concern to the Council on Medical Service is that such guidance is especially needed at the present time because the prerogatives of medical staffs have come under increasing attack from some segments of the hospital field.

American College of Hospital Administrators "Recommendations"

The most recent of such attacks is from the American College of Hospital Administrators (ACHA) which last year published its "Recommendations on Standards of the Joint Commission on Accreditation of Hospitals." (JACH).

The avowed intent of the ACHA document is to structure the hospital to "operate in accordance with the sound principles of management." To this end, it is stated that "The governing authority has a corporate and legal responsibility for all activities related to the achievement of its purpose. This includes all elements of patient care rendered under the auspices of the hospital."

It is questionable whether the ACHA has considered fully the implication of this statement for the

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Report of the Council on Medical Service of the AMA to the House of Delegates, Annual Meeting, June, 1975.

malpractice liability of a hospital when applied to every act of every physician on the medical staff. That statement if existing in the Standards of the Joint Commission would provide an open opportunity to attorneys involved in malpractice litigation to join the accredited hospital in every action involving suspected physician negligence with regard to hospitalized patients.

It is upon the rather risky thesis of total corporate responsibility and control that the entire ACHA document is based. As stated in the Report on Physician-Hospital Relations, 1974 "if the hospitals are going to consider the *Darling* case as their Magna Carta of authority to exercise control over the practice of medicine, they should by prepared for the other side of the coin of control; namely, liability for all medical acts performed within the hospital."

There is an impressive body of case law in the U.S. holding that the affirmative duty and responsibility of the hospital with respect to patient care is discharged through the employment of competent nursing and ancillary personnel and a competent administrator to whom responsibility for the daily management of the hospital is delegated, through the acquisition of proper equipment for the care and treatment of patients, through the exercise of general supervision over the medical staff's responsibility to assure performance of required review activities, and through general supervision and administration of all aspects of management and operation of a hospital.

These concepts are inherent in the current standards of the JCAH.

The standards proposed by the ACHA, however, go far beyond the existing concepts of a hospital's affirmative duty and responsibility with respect to patient care.

"The governing authority has the responsibility for controlling the quality of medical care," the ACHA proposals state, and its appointed chief of staff and appointed clinical chiefs are required "to establish and maintain controls on the quality of medical care and to ensure the maintenance of high standards of ethical practice." The appointed chief of staff "shall be held accountable to the chief executive officer and through him to the governing authority for the effectiveness of all medical care activities. . . . " These appointed physicians would be subordinates of the chief executive in the hospital hierarchy, and it would be one of his duties to "conduct periodic reviews of subordinates' performance relative to predetermined performance standards."

Not only would the proposed ACHA standards appear to increase the involvement of hospitals in malpractice litigations, they would have the effect of destroying medical staff self-regulation in favor of a rigidly bureaucratic system of control.

The Preface to the ACHA document states that "Self-government of the medical staff is inconsistent with the principles of good organization." The report then proceeds to create two medical staffs in the hospital. The first consists of an appointed chief of staff and a set of appointed clinical chiefs, all responsible to the chief executive officer and, through him, to the governing authority. This medical staff is the only one that has an accountability relationship to the governing authority. The joint conference committee, whose purpose would be to provide liaison between physicians having hospital privileges and governing authority, would have as physician representatives the appointed chief of staff and appointed clinical chiefs, with the addition of the president of the medical staff organization.

A medical executive committee, advisory to the chief of staff would be composed of the appointed chiefs of the major clinical departments, plus the elected president of the medical staff and, possibly, other elected medical staff officers, but "the number of appointed physicians shall be greater than the number of those elected."

The second medical staff would be the "medical staff organization," which would exist "primarily to protect the welfare of the staff as a whole as well as that of individual members." Those quality review functions that it would perform would be under the direct control of the appointed chiefs.

Authority wielded through physicians appointed to administer controls can only lead to the domination of medical staffs and individual physicians by what would be essentially lay boards and lay administration. The document would further establish hospitals in the corporate practice of medicine, a development that is prohibited by law in most states.

The mechanisms put forth by the ACHA apparently are based on some conclusion that physicians are not willing through self-government to maintain discipline and standards of medical care. The current medical staff standards of the JCAH are based on a concept that such is not true, and the actions of countless medical staffs would indicate that the JCAH standards are correctly based.

The mechanisms of successful self-government for medical staffs are set forth in the current JCAH standards. These mechanisms can be used effectively to implement improvement in quality of care. Medical audit performed under the medical staff control holds great potential, when combined with educational programs, to create an atmosphere wherein solid progress can be made.

The ACHA document is contrary to the policy of the American Medical Association, as stated in Recommendation 5 of the Report on Physician-Hospital Relations, 1974:

> "It is the professional prerogative of organized medical staffs to establish their bylaws, rules, and regulations. These are subject to approval by the governing body, but the governing body should not use its approval authority to unilaterally establish or amend them. The medical staff must accept the responsibility for continuing, effective, vigilant efforts to ensure that the bylaws, as duly adopted by the medical staff and approved by the governing body, are adhered to by all medical staff members, including those who are full- or part-time salaried employees of the hospital or who have other contractual financial arrangements with the hospital. In maintaining high quality medical care standards in the hospital, it is essential that the organized medical staff assume full responsibility for the enforcement of its bylaws, rules, and regulations. The hospital governing body and the administration should recognize that professional administrative matters are within the purview of the organized medical staff and should not interfere in matters requiring the exercise of professional medical judgment except to assure itself that the staff is fulfilling the responsibilities and obligations set forth in its bylaws, rules, and regulations."

Catholic Hospital Association Guidelines

The Catholic Hospital Association (CHA) has published recently (1974) *Guidelines on Roles and Relationships of Board, Chief Executive Officer, and Medical Staff of Catholic Hospital and Long Term Care Facilities.* The Guidelines purport to give a stronger role to physicians in the management of hospital affairs. The mechanisms recommended for doing so, however, contain some guides that the Council finds highly objectionable. These Guidelines call for the selection (by the chief executive officer) of a physician in charge of the medical staff organization and a strong role for the executive committee.

A few quotations from the CHA Guidelines will serve to point out some of these objectionable statements. On page 13 appear the following:

> "The board must rely on accepted management principles for holding the medical staff accountable and must make sure that the chief executive officer applies these principles in his dealings with the medical staff in the same way he does when dealing with every other component of the organization. . . .
>
> "As is the case for everyone working in the hospital or long term care facility, the physician is accountable for his actions and performance through the chief executive officer to the board of trustees."

Page 14 of the Guidelines contain the following statements relative to Organization and Relationships:

> "In consultation with members of the medical staff, and with the approval of the board, the chief executive appoints the physician who will be in charge of the medical staff. The physician in charge . . . will be held responsible and accountable to the chief executive officer for the effective functioning of the medical staff organization. . . .
>
> "The chief executive officer should delegate adequate authority to the physician in charge of the medical staff organization to enable him to carry out his responsibilities."

On page 15, still dealing with Organization and Relationships, appears the following:

> "In consultation with members of the medical staff and with the approval of the board and the chief executive officer, the physician in charge appoints the clinical department heads within the medical staff organization."

In discussing the composition of the Executive Committee, the Guidelines state that the physician in charge should, ideally, serve as chairman of the executive committee. Other members must include the heads of the major clinical staff departments, who, as noted above, are appointed by the physician in charge of the medical staff; the elected officers of the medical staff (although an explanatory footnote says: "in those institutions in which the same person is both president and chief of staff, *it is incumbent upon the board to establish an effective mechanism for exercising control over this position.*" (emphasis supplied.) Consideration, it is suggested, should be given to including the chief executive officer and the director of medical education, if there is one, on the executive committee. It would, therefore, appear that the executive committee would be dominated by appointed physicians.

The activities of the executive committee would be as described below:

> "To carry out its responsibility for quality control of medical care, the executive committee must regularly receive reports on the medical staff functions of review, analysis, and evaluation of quality of care. On the basis of these reports, the committee should advise the physician in charge of the medical staff organization when further action on his part is indicated."

It should be noted with particular interest, however, that the 6,000 member National Federation of Catholic Physicians Guild (NFCPG) has stated that implementation of the CHA guidelines would have an adverse effect on patient care. The NFCPG said that the guidelines "would result in the interposition of the hospital administrator and/or his employed physician medical director between the medical staff organization and the board of trustees," which would "impose an unnecessarily authoritative and dictatorial form of control over the medical staff."

The Board of Commissioners of the JCAH has decided that no changes be made in its hospital accreditation standards as a result of the ACHA recommendations. The CHA guidelines were not directed at changing the JCAH standards. Both the CHA and the ACHA documents have similar goals—the subjugation of the self-governing medical staff to control centralized in the chief executive officer of the institution. Some governing boards and administrations have already attempted to secure adoption of these concepts in both corporate and medical staff bylaws. Other incursions upon the prerogatives of the medical staffs may be attempted by government as well as institutional sources.

Considering some of these types of actions, the AMA has already taken steps to establish a Department of Negotiations in its Division of Medical Practice.

Conclusions

The Council is concerned that physicians on medical staffs might develop a false sense of complacency regarding their proper roles and prerogatives and accordingly may not devote appropriate attention to the threat of domination of medical staffs by governing boards and administrations.

Recommendation 5 of the Report on Physician-Hospital Relations, 1974, is aimed at ensuring that even if there are a number of full-time chiefs of service, the governing body does not thereby assume control over the direction and supervision of staff physicians. The recommendation urges that organized medical staffs accept the responsibility for continuing, effective, vigilant efforts to ensure that the medical staff bylaws are adhered to by all medical staff members, including those who are full-time or part-time salaried employees of the hospital or who have other contractual financial arrangements with the hospital.

Where salaried department heads are members of the medical staff and are subject to its bylaws, rules, and regulations in the same fashion as are attending physicians, there is little chance that the organized medical staff will lose its right to self-government.

There is little chance that a totally salaried executive committee of the medical staff will occur where the Standards of the Joint Commission on Accreditation of Hospitals are followed. These standards of the Joint Commission state that the Executive Committee of the Medical Staff ordinarily will be composed of the president, the president-elect, the immediate past president, the secretary-treasurer, department heads, and one or more members at large from the active medical staff. The standards state that the composition of the medical staff executive committee will vary in accordance with the needs of the hospital. The medical staff in each hospital must decide the makeup of its own executive committee.

Recommendations

The following recommendations are offered to medical staffs of hospitals as a means for ensuring that medical staff authority and responsibility for self-government are not abrogated through governing boards' appointment of salaried or nonsalaried department heads and salaried or nonsalaried chiefs of staff:

1. The following provision is recommended for inclusion in medical staff bylaws to ensure that employed physicians are included within the membership of the medical staff and subject to its bylaws, rules, and regulations:

   > "The credentials committee (or other appropriate committee) shall cooperate with the governing board in reviewing the credentials of all physician applicants for employment by the hospital in order to assure a mechanism that qualifies such employees for regular membership on the medical staff. The procedures followed in processing applications for regular medical staff appointment and for continuing staff privileges shall be applicable to and have control over such employed physicians."

2. In addition to the statement recommended for inclusion in medical staff bylaws in recommendation 1, it is recommended that the medical staff consider the inclusion of proper safeguards in all appropriate sections of the medical staff bylaws, rules, and regulations to make certain that they are applicable to all physicians serving on the medical staff including those employed by the hospital.
3. While medical staff bylaws must be approved by the governing board and, for this reason, are considered to be binding on the governing board, it would appear desirable to include a provision in any contracts with physicians, as well as in the medical staff bylaws, to assure the desired result. The following is suggested:

   > "In accordance with and subject to the procedures of the organized medical staff, Doctor ____________________ is granted and accepts appointment as a member of the medical staff. Notwithstanding any other provisions of this Agreement, this Agreement

shall terminate automatically if the staff privileges of Doctor ______________ are revoked for cause upon recommendation of the organized medical staff."

4. Where a physician is employed in a medico-administrative position within a hospital, the medical staff should establish an advisory committee to counsel and assist the physician in carrying out his responsibilities.
4. Where the employment of a full-time physician to carry out departmental administrative and operational functions is being considered, it is recommended that consideration be given to employing this physician as an administrative assistant to the elected chief with the delegated functions appropriately spelled out in the medical staff or departmental bylaws.
6. Medical staffs in all types of nonfederal hospitals should be alert to the potential dangers of governing board dominance over the executive committee and the need for careful bylaw structuring of the executive committee to prevent this happening.
7. The American Medical Association should firmly oppose the specific proposals of the American College of Hospital Administrators and the Catholic Hospital Association concerning medical staff structure and medical staff-administrator-board relationships. (Note: The Council has concerned itself only with those specific sections of the documents).
8. It is emphasized that medical staffs should take a firm stand against governing board control of medical staff activities related to patient care.
9. State and local medical societies are urged to take action to supplement AMA's effort to assist in negotiations and be prepared to offer support and make legal expertise available to hospital medical staffs involved in negotiations with governing boards and administrations.

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Full-Time Program Directors and Chiefs of Service

At the 1974 Annual Convention, the House of Delegates referred Substitute Resolution 83 to the Board of Trustees for transmittal to the Council on Medical Education and the Council on Medical Service for further study and report back to the House of Delegates. A joint interim report was presented by the two councils at the 1974 Clinical Convention.

Substitute Resolution 83 requested a study in detail of the trend, prevalence, arrangements, and possible difficulties to members of hospital medical staffs as a result of control exercised by governing boards' appointment of salaried department heads and salaried chiefs of staff.

Substitute Resolution 83 has been under consideration by the Council on Medical Education and the Council on Medical Service. Both councils have studied the trend, prevalence, and arrangements of salaried physicians on hospital staffs. In addition, the Council on Medical Service has studied more closely the possible difficulties, both current and future, that may affect members of the medical staffs as a result of control exercised by governing boards' appointment of department heads and chiefs of staff, whether or not salaried. A separate report of the Council on Medical Service (Report C (A-75) delves more deeply into these possible difficulties and contains recommendations concerning them.

Information regarding the prevalence of contractually employed chiefs of staff and medical directors as well as contractually employed directors of medical education has been developed most recently by the American Hospital Association (AHA) from a Survey of Medical Staff Organization conducted by it in 1973. The AHA has kindly made available to the Councils the date from its survey that are pertinent to the study requested by Substitute Resolution 83.

In addition, the surveys of the Council on Medical Education provide data regarding the employment of full-time directors of residency programs in teaching institutions.

AHA Survey

The American Hospital Association's Survey on Medical Staff Organization was conducted in 1973. Questionnaires were sent to all nonfederal short-term general hospitals (5,603). Responses were received from 4,213 hospitals, a response rate of 75.2%. The response rate by type of hospital control is as follows:

Control	*No. of Hospitals*	*No. Responding*	*Response Rate*
Nongovernmental Not for Profit	3,187	2,594	81.4%
Nongovernmental For Profit	715	371	51.9%
Governmental	1,701	1,248	73.4%

One of the sections of the questionnaire sought information regarding the following medico-administrative positions of the medical staff:

(a) Medical Director (or Vice President for Medical Affairs)
(b) President of Medical Staff (or Chief of Staff)
(c) Director of Medical Education (DME)

The AHA survey questionnaire sought information regarding the status of directors of the clinical services in responding hospitals also. For each of 17 services the questions were as follows:

Is the director contract or noncontract?		Is the director salaried?	
Contract	Noncontract	Yes	No

A question also was asked whether the directors were full time or part time but the responses indicated that the question was misunderstood in relation to the other questions in a significant number of cases so any tabulations are of doubtful validity. To this extent the results of the survey do not answer the question raised in Resolution 83 (A-74) concerning the number of full-time salaried clinical department chiefs in the nation's hospitals.

Data regarding the Medical Directors, Presidents of Medical Staff (or Chiefs of Staff), and Directors of Medical Education are shown in Tables I, II, and III in the Appendix. The "Noncontract" column under "Compensation Category" represents voluntary physicians serving in the role. The "Percent Contract" column represents the percentage of the responding hospitals in the control category having either a full- or part-time contract physician serving in the designated capacity. The fact that in Table II the number of presidents or chiefs of staff in the several compensation categories do not add up to the total number of hospitals may be due to some hospitals not having a medical staff president or chief of staff where a medical director position is established.

Tables I and II indicate that a substantial percentage of hospitals have contractual physicians at the top level of the medical staff.

Joint Report of the Council on Medical Education and the Council on Medical Service of the AMA to the House of Delegates, Annual Meeting, June, 1975.

Table I

MEDICAL DIRECTORS IN
NONFEDERAL SHORT-TERM GENERAL HOSPITALS
BY CONTROL AND BY COMPENSATION CATEGORY
1973

Control	Total No. Hospitals in Survey	Compensation Category Non-contract	 Contract Full Time	 Contract Part Time	 Percent Contract
Nongovernmental Not for Profit	2,594	116	127	56	7.1%
Nongovernmental For Profit	371	55	15	13	7.5%
State and Local Governmental	1,248	42	49	13	5.0%
TOTAL	4,213	213	191	82	6.5%

Source: American Hospital Association Survey

Table II

PRESIDENTS OR CHIEFS OF STAFF IN
NONFEDERAL SHORT-TERM GENERAL HOSPITALS
BY CONTROL AND BY COMPENSATION CATEGORY
1973

Control	Total No. Hospitals in Survey	Compensation Category Non-contract	 Contract Full Time	 Contract Part Time	 Percent Contract
Nongovernmental Not for Profit	2,594	2,385	24	65	3.4%
Nongovernmental For Profit	371	290	3	20	6.2%
State and Local Governmental	1,248	1,030	17	42	4.7%
TOTAL	4,213	3,705	44	127	4.1%

Source: American Hospital Association Survey

Where the contractual relationship involves the president or the chief of staff, the pattern is predominantly for the position to be filled by a physician with a part-time contract (74.3% of contractual positions). For medical directors, however, the contractual pattern is for full-time positions (70%). It is worth noting that of 486 medical director positions, 213 or 43.8% are filled by voluntary physicians.

Since some duplications may be presumed, there are at least 191 (4.5%) nonfederal short-term general hospitals with contractual full-time physicians at the top level of the medical staff hierarchy.

Table III

DIRECTORS OF MEDICAL EDUCATION IN NONFEDERAL SHORT-TERM
GENERAL HOSPITALS BY CONTROL AND BY COMPENSATION CATEGORY
1973

Control	Total No. Hospitals in Survey	Compensation Category Non-contract	 Contract Full Time	 Contract Part Time	 Percent Contract
Nongovernmental Not for Profit	2,594	270	176	194	14.3%
Nongovernmental For Profit	371	53	1	6	1.9%
State and Local Governmental	1,248	57	41	28	5.5%
TOTAL	4,213	380	218	228	10.6%

Source: American Hospital Association Survey

Table III is notable in that it shows a large number (380) of noncontract or voluntary directors of medical education in non-federal short-term general hospitals. This compares with data collected by the Council on Medical Education (CME) from teaching hospitals, which indicate that as of September 1, 1973, there were only 76 nonsalaried directors of medical education. (Medical Education in the United States, 1973-1974, JAMA, Vol 231 (Suppl.), 1975, page 46.) One possible explanation is that the current Joint Commission on Accreditation of Hospitals (JCAH) requirement that medical staffs provide a continuing program of professional education has led to the appointment of voluntary DMEs in a large number of nonteaching hospitals (those hospitals without formal residency training programs).

While the AHA survey shows only 218 contractual full-time DMEs, the CME survey reports 533 full-time salaried DMEs in 1973. The explanation undoubtedly lies in the fact that the CME survey is not limited to nonfederal short-term general hospitals but covers federal teaching hospitals and long-term general teaching hospitals as well. The AHA Survey reached only 727 teaching hospitals. The CME Survey reports on 1,561 hospitals in the United States and U.S. Territories and Possessions with residency training programs.

Table IV in the Appendix presents a tabulation from AHA data of the number of hospitals with organized clinical departments in each of 13 major nonhospital-based and 4 hospital-based specialties. The data are divided between teaching hospitals responding to the survey (727) and nonteaching hospitals (3,486).

The data in Table IV provide an insight into the number of clinical department chiefs who have written or oral compensation contracts in which their compensation is from funds managed or controlled by the hospital administration and/or governing body. Contractual salaried service chiefs (C-S) are those receiving a fixed annual salary from hospital-controlled funds on either a full- or part-time basis. Contractual nonsalaried chiefs (C-NS) are those being conpensated from hospital-controlled funds under a fee-for-service, percentage of departmental income, other arrangements, or combination of arrangements. (The AHA survey did not attempt to secure information as to the number of each variety of Contract Nonsalaried arrangement.)

Table IV

DIRECTORS OF CLINICAL SERVICES IN DEPARTMENTALIZED NONFEDERAL SHORT-TERM GENERAL HOSPITALS FOR SELECTED SPECIALTIES BY COMPENSATION CATEGORY—1973

	TEACHING HOSPITALS *Total Reporting = 727*						*NON-TEACHING HOSPITALS* *Total Reporting = 3486*					
Specialty	*Hosp. Rptg. Org. Dept.*	*NC*	*C-S*	*C-NS*	*C-U*	*% on Contract*	*Hosp. Rptg. Org. Dept.*	*NC*	*C-S*	*C-NS*	*C-U*	*% on Contract*
Int. Med.	708	427	268	11	2	39.7%	1,691	1,577	57	45	12	6.7%
Surg.	710	478	221	8	3	32.7%	1,950	1,893	38	16	3	2.9%
Ob-Gyn.	670	476	185	8	1	29.0%	1,509	1,472	28	7	2	2.5%
Ped.	629	424	196	7	2	32.6%	1,088	1,050	28	7	3	3.5%
Psych.	472	278	180	9	5	41.1%	443	374	57	7	5	15.6%
Fam. Pract.	395	331	60	1	3	16.2%	1,075	1,034	24	15	2	3.8%
Derm.	288	233	50	4	1	19.1%	167	165	2	0	0	1.2%
Neurol.	297	199	80	14	4	33.0%	175	149	10	13	3	14.9%
Neurosurg.	327	266	57	3	1	18.7%	171	166	2	3	0	2.9%
Ophthal.	401	331	63	6	1	17.5%	361	350	7	3	1	3.0%
Orthoped.	432	341	84	3	4	21.1%	395	384	7	3	1	2.8%
Otolaryn.	376	308	63	3	2	18.1%	277	269	5	3	0	2.9%
Urology	390	314	69	6	1	19.5%	367	349	12	6	0	4.9%
Total	6,095*	4,406	1,576	83	30	27.7%	9,669*	9,232	277	128	32	4.5%
Anesth.	634	321	193	100	20	49.4%	1135	741	179	182	33	34.7%
Path.	697	84	366	206	41	87.9%	2049	300	567	1020	162	85.4%
Phys. Med.	346	87	200	45	14	74.9%	303	160	94	35	14	47.2%
Radiol.	703	148	273	234	48	78.9%	2139	451	447	1072	169	78.9%
Total	2380*	640	1032	585	123	73.1%	5626*	1652	1287	2309	378	70.6%

NC = Noncontract; C-S = Contract Salaried; C-NS = Contract Nonsalaried; C-U = Contract Unspecified
*Total of organized departments reported by responding hospitals.
Source: American Hospital Association Survey

Some of the questionnaires returned listed a contractual arrangement with a service chief but did not specify whether salaried or not (C-U).

Analysis of these data in Table IV reflect the following:

1. Teaching hospitals tend to have a greater average number of organized clinical departments (8.4 nonhospital-based specialties; 3.3 hospital-based) than do nonteaching hospitals (2.8 and 1.6).
2. While teaching hospitals average 11.7 organized clinical departments (of the 17 included in the survey), only an average of 4.7 of these are headed by contractually reimbursed physicians (2.3 nonhospital-based specialties; 2.4 hospital-based). In comparison, nonteaching hospitals average 4.4 organized clinical departments, with an average of 1.3 of these headed by contractually reimbursed physicians, (0.2 nonhospital-based specialties; 1.1 hospital-based).
3. In teaching hospitals, the four major departments of Internal Medicine, Surgery, Obstetrics and Gynecology, and Pediatrics registered substantial percentages of contractual direction, exceeding the average for contractual direction of organized departments encompassing all 13 nonhospital-based specialties. In nonteaching hospitals, of these four specialties, only Internal Medicine registered a percentage of departmental, contractual direction that exceeded the average for all nonhospital-based specialties.
4. Salary (C-S) was the most common arrangement for reimbursing contractual directors of clinical services. This prevalence was especially noticeable in teaching hospitals. In nonteaching hospitals, contract nonsalaried arrangements assumed greater significance. This is particularly noticeable in the hospital-based specialties of Pathology and Radiology. In these two specialties, there is a complete shift in the preferred type of contractual reimbursement from teaching to nonteaching hospitals.
5. Anesthesiology and Physical Medicine also display some interesting changes between teaching and nonteaching hospitals. While in both types of institutions less than half of organized departments of anesthesiology are headed by a contractual physician, the lower number in

Table V

FULL-TIME DIRECTORS OF RESIDENCY PROGRAMS

September 1, 1973

	In Affiliated Hospitals		*In Nonaffiliated Hospitals*		*Total Programs in Specialty*		
Specialty	*No. of Prog.*	*FTD*	*No. of Prog.*	*FTD*	*No. of Prog.*	*FTD*	*%*
Anesthesiology	159	138	11	10	170	148	87%
Child Psychiatry	105	71	33	23	138	94	68%
Colon & Rectal Surgery	15	5	5	2	20	7	35%
Diagnostic Radiology	167	148	8	8	175	156	89%
Dermatology	89	77	3	3	92	80	87%
Family Practice	161	123	45	33	206	156	76%
General Practice	17	8	34	18	51	26	51%
General Surgery	394	259	88	36	482	295	61%
Internal Medicine	385	314	48	38	433	352	81%
Neurological Surgery	99	81	—	—	99	81	82%
Neurology	115	102	2	2	117	104	89%
Nuclear Medicine	26	20	—	—	26	20	77%
Obstetrics-Gynecology	298	189	49	18	347	207	60%
Ophthalmology	160	90	17	6	177	96	54%
Orthopedic Surgery	183	109	24	6	207	115	56%
Otolaryngology	110	80	3	1	113	81	72%
Pathology	417	361	85	74	502	435	87%
Pathology - forensic	8	8	22	17	30	25	83%
Pathology - neuro	29	21	—	—	29	21	72%
Pediatrics	244	203	30	19	274	222	81%
Pediatric allergy	43	30	3	3	46	33	72%
Pediatric cardiology	56	49	—	—	56	49	88%
Physical Medicine & Rehab.	66	53	3	2	69	55	80%
Plastic Surgery	111	55	7	1	118	56	47%
Psychiatry	205	167	65	45	270	212	79%
Radiology	193	157	18	16	211	173	82%
Therapeutic Radiology	89	77	8	6	97	83	86%
Thoracic Surgery	92	66	4	2	96	68	71%
Urology	174	112	14	9	188	121	64%
TOTALS	4,210	3,173	629	398	4,839	3,571	74%

Source: Medical Education in the United States 1973-74 JAMA Vol. 231 (suppl.), 1975, pages 40 and 47.

nonteaching hospitals is significant. Physical Medicine departments, while predominantly headed by contractual physicians in teaching hospitals, are more frequently directed by voluntary physicians in nonteaching hospitals.

Council on Medical Education Survey

Table V in the Appendix shows the number of programs in each specialty and the number of full-time directors for both affiliated and nonaffiliated hospitals as well as the percentage of full-time directors in the total programs. About 74% of all residency programs currently have full-time directors. Those in affiliated hospitals have full-time directors in 75.4% of the programs. Those in nonaffiliated hospitals have full-time directors in 63.3% of the programs.

The Council on Medical Education reports that as of September 3, 1973, there were 1,100 affiliated teaching hospitals with residency programs. Since these hospitals employed 3,173 full-time directors of residency programs, the average number of full-time program directors per affiliated hospital was slightly less than 3. For each of the 477 nonaffiliated teaching hospitals, with a total of 398 full-time program directors, there was an average of less than one full-time program director per hospital.

The Council on Medical Education figures do not disclose whether full-time directors of residency programs were also chairmen of their departments.

Educational Programs and Staff Relationships

Safeguards against executive committee control were pointed out in the Council on Medical Service Report on Physician-Hospital Relations, 1974, and were reiterated in Resolution 83 (A-74), as introduced. The Report made three recommendations with particular emphasis on the assumption by hospital medical staffs of responsibility "to ensure that, in all teaching situations, the rights of the patient and the responsibilities of the attending physician not be abrogated."

The initation of a teaching program or changing the structure of an existing teaching program may raise the problems of professional liability, informed consent with private patients, and the possible double standard of care implied by the fact that certain members of the staff are on the teaching faculty while others are not.

Teaching programs directed by physicians who devote their entire time to programs in hospitals encroach upon the authority of the private practitioner unless the programs are developed with the clear understanding of all members of the medical staff who will inevitably be affected by them.

A most interesting report on how this may be prevented was written by Chun, Bristol, and Aihara *(Hawaii Medical Journal* 31:177, May-June, 1972). Their concept of team care involved the use of only one full-time coordinator. Only 5.7% of the admissions were non-private, yet 74.4% of admissions were on team care (teaching service). The authors emphasize the value of this strategy as a medium for continuing medical education as well as for improvement of patient care.

Particularly in teaching hospitals it can be shown that the private attending physician is capable of coexisting comfortably with "full-timers" and with much mutual benefit. As medical education expands to fill the needs of the nation, community hospitals are being drawn into the teaching effort. Unless the purposes, methods, and demands of teaching are well understood and accepted by the entire attending staff, frictions are bound to develop. Examples are not hard to find of both good and bad handling of such situations, but there is nothing that intrinsically compels the loss of authority of the private practitioner by the introduction of a teaching program. It seems apparent that the teaching program needs the participation of nonsalaried practitioners for several reasons. Too often, the young physician is graduated with only the slightest idea of how to conduct a practice; and it is the practitioner who can teach him this. In fact, the volunteer teaching staff member tends to bring an entirely fresh approach to the content of teaching through the conduct of management rounds. He is well aware of the personal problems of patients—in particular, of the impact of illness on financial and family relationships as well as upon the patients' own psychologic well-being.

The benefits to patient and practitioner of having full-time persons on the staff are not inconsiderable. Busy physicians often cannot afford the time to carry out the administrative detail necessary to maintain teaching programs. This must be done for them. A well-run residency program can save them many hours of in-hospital work, affording care to the patient that would otherwise be unavailable.

Interestingly enough, the "Essentials of Approved Residencies" (which are the ground rules under which residencies are supposed to be conducted) nowhere called for full-timers. The only specification is that program directors be "chosen on the basis of ability, aptitude, interest, and time available for supervision and direction of the residency program." But experience has shown that "time available" means such a large proportion of the 24 hours that a full-time appointment is the most efficient way of assuring proper conduct of the program.

Finally, the full-time man gives the resident a sense of continuity in his own development. He is relatively more available for consultation in difficult situations and for counseling and advice. It is these aspects, perhaps more than any other, that makes the presence of full-time men so attractive to residents.

Conclusions

Review of the results from both the Council on Medical Education's survey of full-time directors of residency programs and the AHA survey of directors of clinical services in departmentalized nonfederal short-term general hospitals leads to the following conclusions: In the average hospital, whether teaching or nonteaching, full-time employed department heads did not seem in 1973 to exist in such large quantities as to constitute a dominating force on the medical staff executive committee. However, it is recognized that in those hospitals that range upward from the average toward a full complement of employed department chiefs or program directors, consideration should be given to the possibility of dominance of the medical staff executive committee by them or through them by the governing board.

It was not possible to develop hard data showing "trends" in changing numbers of full-time salaried physicians on hospital medical staffs. It is the opinion of the councils, however, that the complexity, number, and variety of components in teaching programs have led to an apparent increase in the establishment of positions of Director of Residency Programs. It is believed that the need for continuing education for all health professionals (not only the house staff) has contributed to a greater number of hospitals desiring to have medical educators on their staffs.

The administrative responsibilities of a department chief may become so complex that the medical staff seeks the employment of a salaried physician to assist in carrying out the functions and responsibilities. The recommendations of the Report on Physician-Hospital Relations, which was adopted by the AMA House of Delegates in 1974, pertaining to teaching hospitals should also provide guidance to the staffs in nonteaching hospitals; likewise, the departmental administrative functions in a nonteaching hospital may be delegated to an employed physician with the elected chief retaining the overall authority and responsibility.

Delegated functions could include such duties as administration of peer review activities, departmental education activities, and day-to-day operational liaison with hospital administrative departments. Whether these administrative functions are carried out by a salaried assistant to the elected chief or by a full-time salaried chief, the individual should be a member of the medical staff and subject to its bylaws, rules, and regulations.

Inherent in this concept is the requirement that the salaried physician must be subjected to credentials review by the medical staff. Also inherent in the concept is a requirement that continuation of employment should be conditional upon maintenance of medical staff membership. In maintaining medical staff membership, the same due process protection should be afforded to the employed physician as to other members of the staff.

Recommendations

1. Recognizing that the administrative functions of a department chief may become so varied and extensive that the medical staff seeks the employment of a full-time physician to assist in carrying out functions and responsibilities, it is recommended that the duties and responsibilities of each be clearly delineated.
2. It is essential that resident physicians participate in rounds conducted both by physicians attending individual patients and by teaching physicians in illustrating disease entities. To assure that this is accomplished, it is recommended that the director of a residency program in hospitals having a voluntary staff be assisted by an advisory committee of attending physicians. As noted in the Report on Physician-Hospital Relations, 1974, this, plus other actions by the attending staff, will guard against the possibility that physicians appointed to full-time positions in the hospitals will dominate unduly the hospital and its functions. This recommendation is based on the concept that full-time specialists who are engaged solely in teaching and research may lose contact with essential elements in the practice of medicine outside the hospital setting.
3. Since double standards with respect to hospital privileges should be avoided, physicians should be governed by the same standards of competence irrespective of whether they are independent attending physicians who bring their private patients to the hospital or physicians who are under contract or employed on a part- or full-time basis by the hospital. Every physician providing medical service directly or indirectly should be subject to uniform review and evaluation under medical staff bylaws, standards, rules and procedures of excellence.
4. Patient care within the hospital must always be under the direction and control of the organized medical staff and implemented by physicians who are free to exercise their best medical professional judgment without interference on the part of lay persons, regardless of whether such persons constitute the governing board or are agents of the governing board.

NOTICES

RECENT ADVANCES IN PEDIATRICS FOR THE PRACTITIONER

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CORRECTION

In the article "The Water Used in Artificial Kidneys," published in the September issue (39:563-567, 1975), an incorrect word was used. In the first sentence in the last paragraph on page 566 the word "not" should have been "now"; the sentence should read "In summary, chronic dialysis therapy has now reached a point where patients with terminal renal failure can expect to lead relatively normal lives for long periods of time with proper treatment."

FROM THE EXECUTIVE DIRECTOR'S OFFICE

160 St. Ronan Street, New Haven, Conn. 06511
Telephone 865-0587

Francis G. Sweeney
Assistant Executive Director
Public Affairs

William R. Richards, M.D.
Executive Director
Josephine P. Lindquist
Associate Executive Director

Leonard R. Tomat
Assistant Executive Director
Scientific Activities

Summary of Actions
Council Meeting
Wednesday, September 17, 1975

I. Attendance

Present in addition to the Chairman, Dr. D.A. Grendon, and the Vice Chairman, Dr. J.K. Freedman, were: Drs. VanSyckle, Friedberg, Johnson, Backhus, Nolan, Root, Jr., Gardner, Bradley, Cramer, Fabro, Granoff, Kamens, Ragland, Jr., James, Krinsky, Sonnen, McGarry, Beck, Canzonetti, Robinson, Magram, Mendillo, Barrett, Dambeck and Bird.

Also present: Mrs. Lindquist, Mr. Sweeney, Mr. Tomat, Mr. Sullivan (AMA) and Dr. Richards.

Absent were: Drs. Hess, Rubinow, Klare, Harkins and Eslami.

II. Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of August 21, 1975.

Life Memberships

It was VOTED to approve applications for Life Membership received from the following eligible Active Members:

Willard E. Buckley, 770 Saybrook Road, Middletown
Clement C. Clarke, 240 Bradley Street, New Haven
William F. Donovan, 798 Farmington Avenue, West Hartford
Richard A. Westsmith, Main Street, Lakeville
William Kaufman, 540 Brooklawn Avenue, Bridgeport
Anthony J. Pepe, 3 Marshall Lane, Ansonia
Theo M. Poirier, 26 Maple Avenue, Windsor
William D. Troy, 140 Hoyt Street, Stamford

Date of Next Meeting

The Chairman Set the date for the next meeting of the Council as Thursday, October 23, 1975.

III. Old, New and Special Business

Resignations, Appointments, Etc.

(a) *Ad Hoc Committee to Study Acupuncture:* It was VOTED to accept with regret the resignation of James D. Kenney, New Haven, as a member of the subject Ad Hoc Committee.

(b) *Editorial Committee of Connecticut Medicine:* It was VOTED to appoint Charles M. Krinsky, New London, to membership on the subject Committee.

Report—AMA House of Delegates Meeting, Atlantic City, N.J., 6/14-19/75

It was VOTED to receive as information a subject report as follows:

E. Tremain Bradley: Dr. Bradley, an AMA Delegate, presented in outline form and under separate categories the numerous actions taken by the House of Delegates and some of the background information that had bearing on those actions. Using the outline as a guide, he elaborated on several of the major actions taken—in particular, on the AMA's fiscal status and the increase in dues (to $250) that will become effective in 1976. During the discussion of Dr. Bradley's report, it was noted that some 35,000 or so of AMA members had not yet paid the $60 special assessment imposed in 1975 and that the House of Delegates would probably be asked at the next (Honolulu) meeting to confirm or reject the prevailing premise that payment of the assessment is mandatory in the same way that payment of membership dues is mandatory. After considering this matter carefully, the Council VOTED to instruct the Connecticut delegation to introduce a resolution for consideration at the next meeting of the AMA House of Delegates as follows:

RESOLVED: That payment of the $60 special assessment imposed in 1975 be mandatory and a condition of membership in good standing for all AMA members who were billed for payment of said special assessment.

Reports—Fiscal Subcommittee

Reports of the Fiscal Subcommittee were received and acted upon as follows:

(1) *CSMS 1971 Relative Value Guide:* The Council was apprised that the initial printing of the 1971 RVG is about exhausted and that if the program of furnishing copies of the Guide to new members upon their election is to be continued, it will be necessary to fund a second printing of at least 1,000 copies at an estimated cost of $1,750 (additional copies - $800 per thousand). After a lengthy period of discussion as to the current usefulness of the RVG to members and/or third party payors, and after considering a proposal that additional copies of the RVG be printed for distribution to new members, the Council VOTED to transmit to the House of Delegates for approval a recommendation of the Council that publication of the CSMS 1971 Relative Value Guide be discontinued. Note was made that neither the nomenclature nor the coding of the subject RVG are recognized by the claims department of any third party payor in Connecticut, private or public.

(2) *CACS "Secondary Analyses" Project:* It was voted to approve a recommendation of the Fiscal Subcommittee that, if the Council votes to approve this project for implementation, funds in the amount of up to $7,000 be allocated from a source other than the contingency fund budgeted for 1975.

(3) *CSMS Contribution to Cancer Exhibit at a Black Expo:* It was VOTED to approve a recommendation of the Fiscal Subcommittee that the Society contribute $50.00 toward meeting the costs of a subject exhibit on cancer being planned for New Haven on 11/2-3-4 by the Consortia of the Comprehensive Cancer Center. The other five agencies comprising the Consortia will also contribute $50 each.

Report—CSMS Representative, Commission on Hospitals and Health Care

It was VOTED to receive as information, and with commendation, a report submitted by Sidney L. Cramer, Hartford, on matters coming before the subject Commission in recent months and the actions taken thereon by the Commission. In general, the matters reported on by Dr. Cramer concerned various aspects of the new budgets submitted for Commission approval by Connecticut's community hospitals, a number of line items in those budgets which are being closely questioned by the Commission, and the role that the Commission may play when P.L. 93-641 is fully implemented in the state. The report contained no recommendations for Council action.

Reports, Requests, Etc.—Committee on Statewide Medical Planning and CACS

It was VOTED to accept for filing a multi-item report submitted by the Committee on Statewide Medical Planning, by the Connecticut Ambulatory Care Study staff and by CSMS staff regarding CACS fiscal matters. Because of the complexity of the matters encompassed in these reports, and because of the lateness of the hour, it was VOTED to postpone consideration of all items in the reports except the following:

(a) *Audit of CACS Account in 1975:* Being apprised that audits of the CACS account had been made for 1973 and 1974 (at CACS expense) as an integral part of the annual audit made of the Society's total financial operation, and that a suggestion had been made by CACS spokesmen that such an audit was not really necessary this year or could be made just as well by HEW, if requested, the Council VOTED to approve a recommendation of the Screening Committee "that an audit of the CACS account be included as a part of the CSMS audit for 1975." The Council was informed that $200 of the remaining funds of CACS is being held as a budgeted item to cover auditing costs of that portion of the total CSMS audit that is attributable to the CACS account.

(b) *Proposed CSMS Funding of CACS "Secondary Analyses" Project:* The Council members were joined by Frederick C. Weber, Jr., Principal Investigator of CACS, who presented, elaborated on and answered questions about the subject proposal. In brief, Dr. Weber indicated that data obtained by secondary analysis of the information gathered by the original Ambulatory Care Study might prove to be of equal or even greater value than the data derived from primary analysis; that the secondary analyses would undoubtedly give in-depth meaning to the primary findings of the Study; and that Society would "own" the project exclusively because funding thereof would be exclusively by the Society. After a lengthy period of discussion, the Council VOTED to approve the proposed project for implementation by the Society; to approve the budget for the project of $6,155, prepared and submitted by CACS Staff; and to authorize a total expenditure of up to $7,000 from a source other than the 1975 contingency fund, the above-budget amount of $845 to be used only by CSMS Staff to cover accounting costs and other administrative costs that may have to be incurred. *N.B.:* Subsequent to the meeting, it was noted that the "secondary analyses" project budget that was submitted by CACS Staff was incorrectly titled: "Proposed Budget, Contract HSM 110-73-311, For Completion of Study, 9/1/75-12/31/75." Such a title might suggest that the funds requested are to be used to complete the Study conducted under contract with HEW, whereas Dr. Weber made it clear that the "secondary analyses" project, being funded by the Society, would be entirely separate from the contractual Study, and would be the property of the Society.

Policy Statement re "Industrial Hygiene"

It was VOTED to approve a subject statement, submitted by the Committee on Public Health, minus a paragraph proposing distribution of same. It was further VOTED (as the Committee suggested) to send the statement and notice of the Council's approval thereof to the National Institute of Occupational Safety and Health, the Connecticut State Department of Higher Education and three named Connecticut academic institutions which have recently begun to develop programs of education and training in the field of industrial hygiene. The principal thrust of the subject statement is that "recognition, evaluation and control of health hazards in the industrial environment" are becoming of ever greater importance to occupational safety and that the need for educating paramedical personnel to enhance and expand the practice of Occupational Medicine is vital.

Statement re Use of Fresh Blood for Transfusion

As requested, a member of the Committee on Organ and Tissue Transfers, Joseph R. Bove, New Haven, joined the Council to elaborate upon and clarify a subject statement submitted by the Committee which had been discussed previously by the Council at its meeting on 8/21/75. Following Dr. Bove's presentation and response to questions, it was VOTED to approve the statement as submitted. It was further VOTED to approve recommendations of the Committee as follows: (a) Transmit the statement, as information and for guidance, to hospital transfusion committees and blood banks; (b) Publication in *Connecticut Medicine*. In brief, the statement advocated more selective use of fresh whole blood for transfusion and greater use of blood derivatives in situations in which it is desired to achieve a specific purpose that has been identified by laboratory tests.

Report on CRMP - J. Alfred Fabro

It was VOTED to receive as information a report submitted by Dr. Fabro which recounted the matters discussed and the actions taken thereon at an 8/25/75 meeting of the CRMP Executive Committee and at an 8/28/75 meeting of the CRMP Advisory Board. Also received as information was a separate report on the same meetings submitted by Orvan W. Hess, New Haven, another CSMS-designate on the CRMP Executive Committee and Advisory Board. In brief, the matter discussed at the two subject meetings was whether CRMP should continue its role of the funding agency for a number of ongoing and/or new programs through June 30, 1976 (when it is scheduled to cease operations) or whether it should conclude operations by 12/31/75 and any balance of funds turned over to agencies participating in the implementation of P.L. 93-641—The Health Planning and Resources Development Act of 1975 (which is to replace Regional Medical Programs and Comprehensive Health Planning Agencies entirely by 7/1/76). It was further VOTED to *accept* Dr. Fabro's report and to adopt the motion "that if the question of budget is reopened at subsequent CRMP meetings, CSMS-designates on the CRMP Executive Committee and Advisory Board are to support Health Commissioner Douglas S. Lloyd in his efforts to wind down CRMP activities by 12/31/75." Notice of this latter action of the Council is to be transmitted to Commissioner Lloyd as information.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on September 17, 1975. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

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OBITUARY

George E. Roch, M.D.
1908 - 1975

Dr. George E. Roch, whose sudden and untimely death occurred at the Windham Community Memorial Hospital, August 31, was born in North Grosvenor Dale, Connecticut, February 4, 1908. He was the son of Dr. Emilien Roch, a general practitioner of his day, and Dolenda Paradis Roch.

Graduating from Holy Cross in 1930, he entered Tufts Medical School, receiving his M.D. degree in 1934. After one year internship at St. Francis Hospital, in Hartford, he began his practice in Willimantic in 1935. During World War II, he served his country as a Lieutenant Commander in the Navy in the Pacific area.

He was Chief of Staff for two terms at the Windham Community Memorial Hospital. He was a past-president of the Windham County Medical Association and represented that association on the Council of the Connecticut State Medical Society for ten years. He was a past-president of the Connecticut Political Action Committee. He also was a member of the American Medical Association, the Connecticut Academy of Family Practice, and the American Association of Physicians and Surgeons. He represented the Connecticut State Medical Society on the Board of Licensure of Nursing Homes Administrators for several years.

While all the above indicates a very active life in medicine and its affairs, it does not portray the true essence of the man—his dedication to his patients, who always came first; his strong convictions and the forthrightness with which he expressed them, so one was never in doubt as to where he stood on an issue; his dry sense of humor which often helped to ease the tensions of serious discussion; his devotion to his family, which was a very closely knit one as his sons were growing up.

I had the privilege of getting to know him quite well as we rode together to various medical meetings, and to learn how disturbed he could get at times about government encroachment on medical practice, though this rarely surfaced quite as vehemently in open discussion.

The sudden termination of the life of this active, dedicated physician will long be felt by his beloved family, patients, and colleagues.

He is survived by his wife, Margaret Pyle Roch, who is at present serving her second term as President of the Woman's Auxiliary to The Connecticut State Medical Society; his three sons, Robert, George and James; and a sister, Miss Carmen Roch.

RALPH L GILMAN, M.D.

In Memoriam

Ballard, Claude J., Southwestern Medical College, 1951. Dr. Ballard was a practicing psychiatrist in the Hartford area since 1958. He joined the psychiatric staff at Norwich State Hospital in 1955 and worked as chief of intensive care at the hospital from 1958 to 1960, and was also associated with the Elmcrest Psychiatric Institute, Portland, from 1960 to 1971. He was a member of the staff at Hartford Hospital and employee of Whiting Forensic Institute. Dr. Ballard was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. He died August 8, 1975.

Burke, Joseph F., Yale Medical School, 1931. Dr. Burke was a practicing surgeon in the New Haven area since 1933. Dr. Burke entered the U.S. Navy during World War II where he served in the Pacific. During 1946 and 1947 he was a medical officer serving at the U.S. Naval Hospital in Newport, R.I., and was discharged as a commander. He was president of the medical staff of St. Mary's Hospital in Waterbury in 1948 and from 1955 to 1959 was chief of surgery there. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Burke died August 6, 1975.

Cameron, Norman A., Johns Hopkins Medical School, 1933. Dr. Cameron was a practicing psychiatrist in the New Haven area since 1954. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Cameron died August 4, 1975 at the age of 79.

Earle, B. Baylis, University of Chicago, 1930. Dr. Earle was a general practitioner in the Hartford area since 1932. During World War II he served on the local draft board and was cited by Presidents Roosevelt and Truman for his work. Dr. Earle was a former member of the Hartford Hospital Staff, and a courtesy member of St. Francis Hospital. He was a member of the Hartford County Medical Association, The Connecticut State Medical Society and the American Medical Association. Dr. Earle died September 27, 1975, at the age of 72.

Golston, Harry, Medical College of Virginia, 1926. Dr. Golston was an internist and cardiologist in the Hartford area since 1943. He was a naval veteran of World War I and served with the rank of Captain in the Naval Reserves during World War II. He was also affiliated with the United States Veterans Hospital in Newington, during the second World War. Dr. Golston served on the staff of Mount Sinai Hospital, Hartford, and was also affiliated with St. Francis Hospital and Hartford Hospital. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Golston died October 1, 1975, at the age of 75.

Groark, Joseph A., Yale Medical School, 1924. Dr. Groark was a general practitioner in the New Haven area since 1925. He was a member of the staff of St. Raphael's Hospital and also a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Groark died August 8, 1975 at the age of 77.

Hogan, Walter L., University of Vermont, 1918. Dr. Hogan was a practicing ophthalmologist in the Hartford area since 1924, before his retirement in 1971. He was a former house surgeon at the New York Eye and Ear Infirmary and was on the consulting staff at St. Francis Hospital, McCook Memorial Hospital, Windham Community Hospital, VA Hospital, Newington, the Institute of Living, and Manchester Memorial Hospital. He was on the courtesy staff at Mount Sinai Hospital and Hartford Hospital. He was a lieutenant with the U.S. Navy Medical Corp in World War I. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Hogan died July 17, 1975 at the age of 81.

Howard, Albert J., Yale Medical School, 1920. Dr. Howard was a practicing urologist in the New Haven area since 1920 until his retirement. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Howard died June 29, 1975 at the age of 79.

Howard, Harold, Tufts University, 1930. Tufts Medical School, 1929. Dr. Howard was a general practitioner in the Hartford area since 1930. Dr. Howard served Wethersfield as medical examiner and Health Officer from 1939-1958. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Howard died August 23, 1975, at the age of 74.

Kearney, Maurice W., Harvard Medical School, 1940. Dr. Kearney was a practicing surgeon in the Hartford area since 1947. He was a captain in the Army Medical Corp of World War II in the European and Mediterranean Theaters. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Kearney died July 8, 1975 at the age of 60.

O'Connell, John F., University of Vermont, 1921. Dr. O'Connell was a general practitioner in the Hartford area since 1921. He organized the first physiotherapy department in St. Francis Hospital and was the oldest member of the Hartford County Medical Association. He was also a member of the Connecticut State Medical Society and the American Medical Association. Dr. O'Connell died August 22, 1975, at the age of 96.

Oelschlegel, Herbert C., Jefferson Medical College, 1911. Dr. Oelschlegel was a general practitioner-surgeon in the Litchfield area since 1911. A former state medical examiner, he practiced medicine in the area for 64 years, before his retirement in January. He was a member of the Litchfield County Medical Association and the Connecticut State Medical Society.

Ogden, Ralph T., Harvard Medical School, 1924. Dr. Ogden was a radiologist in the Hartford area since 1925, until his retirement. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Ogden died July 8, 1975 at the age of 77.

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Occupational Medicine: Part Time or Full Time. Desires Greater Hartford or New Britain area. Write CSMS for details.

OB/GYN: Presently chief resident in Ob/Gyn at Washington University Hospital in St. Louis. Board eligible. Desires group or associate practice. Available July 1976. Jr. Fellow of ACOG. Trained in perinatology, endocrinology, oncology. Murray R. Master, M.D., Box 155, Barnes Hospital, St. Louis, Mo. 63110.

Ophthalmology: Available July 1976. Board eligible. Presently on active duty. Wayne State University School of Medicine (1970). Residency at Sinai Hospital of Detroit. 31 years old. Write R.S.L., M.D.

Ophthalmology: Available July 1976. Board eligible. Internship at Greenwich Hospital; Residency at Wills Eye Hospital, Philadelphia. Completed military service. 30 years old. Richard L. Tax, M.D., N. 1605 Park Towne Place, Philadelphia, Pa. 19130.

Ophthalmology: Available immediately. Presently in practice. Wishes to relocate in Connecticut. 36 years old. Trained at Bronx Eye Infirmary. Solo or associate practice in larger city. Board eligible. David I. Wolf, M.D., 15 Vouga Lane, Frontenac, Missouri 63131.

Orthopedic Surgery: Board eligible. Prefers group or associate practice. Trained at Albany Medical Center and Upstate Medical Center in Syracuse. Available now. Robert M. Sheridan, M.D., 18 Pickwick Road, DeWitt, N.Y. 13214.

Orthopedics: Interested in Tolland or Litchfield Counties. Available August 1976. Board eligible. Presently in military service. Trained at Georgetown Medical School and Nassau County Medical Center, New York. Louis F. Candito, M.D., 632 Magnolia Street, New Llano, Louisiana 71461.

Orthopedic Surgery: Available July 1976. Completing training at Albert Einstein College of Medicine. Solo or group practice in medium sized community. 32 years old. Licensed in New York and Pennsylvania. Write K.I.M.

Pathology: Connecticut license. 31 years old. Presently available. Trained at Norwalk Hospital. N. Dah, M.D., 25 Balance Rock Road, Apt. 15, Seymour, Ct. 06483.

Pathology: Board certified (AP-CP). Available within 3 months notice. 37 years old. 3 years experience as instructor at Bowman Gray School of Medicine. Rafik M. Raphael, M.D., 3037 Cumberland Club Circle, N.W., Atlanta, Ga. 30339.

Pathology: Board eligible. Special interest in general pathology. Desires to return to Connecticut. Undergraduate work at University of Bridgeport. M.D. from State University of New York at Syracuse. 32 years old. Jeffrey J. Skovronsky, M.D., 10419 Fyfe Court, Fairfax, VA.

Pathology: Board certified. Anatomic Pathology. Available July 1976. Presently on active duty. M.D. from University of North Carolina. Completed fellowship at Sloan-Kettering Cancer Center. Edward B. Sussman, M.D., 215 Jupiter, Sheppard AFB, Texas 76311.

Pulmonary Medicine: Board eligible pulmonary internist experienced in fiberbronchoscopy completing Fellowship in January 1976. Desires association with small group or hospital staff position. Alan T. Levitt, M.D., 175 West 93rd Street, Apt. 8H, New York, N.Y. 10025. (212) 561-3701 or 663-4255.

Anesthesiology: Available now. Board eligible. Just completed duty as anesthesiologist with U.S. Army hospital in Germany. William R. Dudley, M.D., 167 Sea Hill Road, North Branford, CT 06471

Anesthesiology: Available with short notice. Presently in practice. Desires Greater Hartford area. Board eligible. 41 years old. New York Medical College and Boston University Medical Center. Thomas Stammes, M.D., 51 Woodland Road, Andover, MA 01810.

Family Practice: Board eligible. Available June 1976. 28 years old. University of Rochester. University of Miami Family Practice program. Prefers group or associate arrangement in medium sized town. Robert J. Breiman, M.D., 7801 N.E. 4th Court, Miami, FL 33138.

Family Practice: Board eligible. 30 years old. Completing F.P. residency at University of Minnesota. Attended school in Connecticut. Prefers group practice. Available July 1976. Edward P. LaMotta, M.D., St. Paul Ramsey Hospital, Department of Family Practice, 640 Jackson Street, St. Paul, MN 55101.

Family Practice: Board eligible. Available July 1976. 30 years old. University of Rochester and Family Medicine at Duke University, Durham, N.C. Desires medium or small community. Gary W. Lamphere, M.D., 1703 Kirkwood Drive, Durham, N C 22705.

Family Practice: Available January 1976. Presently in practice. 32 years old. Trained in Vancouver, Canada, and in San Diego, California. Marc Trajan, M.D., No. 228-200 East 30th Street, San Bernardino, CA 92404.

Family Practice: Board eligible. 27 years old. Desires small or medium sized community with group or associate type practice. University of Colorado and San Bernardino Medical Center. David L. Wise, M.D., 804 East 16th Street, No. 6-B, San Bernardino, CA 92404.

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Internal Medicine (Pulmonary): Available July 1976. Certified ABIM. 30 years old. Completing Pulmonary Fellowship at Salt Lake City Medical Center. Vito A. Angelillo, M.D., 1183 South 10th East, Salt Lake City, UT 84105.

Internal Medicine: Available January 1976. Interested in renal, hypertension and electrolyte problems. Presently in practice. Board certified. 30 years old. Solo or group practice in medium sized community. Zaeem Ansari, M.D., Box 728, Margaretville, NY 12455.

Internal Medicine: Available summer of 1976. Temple University and George Washington University Medical Center. Desires group practice in medium or small community. Board eligible. William A. Colom, M.D., 2206 N. Pickett Street, No. 304, Alexandria, VA 22304.

Internal Medicine (Cardiology): Board eligible. FLEX. Completing cardiology fellowship at San Francisco Medical Center. 32 years old. Available June 1976. Richard J. Darling, M.D., 27 Josepha Avenue, San Francisco, CA 94132.

Internal Medicine: Available summer of 1976. Presently chief resident in medicine at V.A. Hospital in Washington, D.C. Board eligible. Desires medium or small town. Richard B. Friedman, M.D., 802 Massachusetts Avenue, N.E., Washington, D.C. 20002.

Internal Medicine (Pulmonary Diseases): Available July 1976. Board certified. Fellow at Kings County Hospital. 27 years old. Desires group or institutional appointment. Dennis Gort, M.D., 822 President Street, No. 4, Brooklyn, NY 11215.

Internal Medicine: Primary care practice in small or medium sized community. Conn. license. Internship and residency done in Connecticut. Board eligible. Available July 1976. Write Bridge, M.D., c/o CSMS.

Internal Medicine (Hematology and Oncology): Board certified. Available July 1976. Solo, group or associate practice. Medium sized community. Fellow at Mayo Clinic. Stephen J. Kaye, M.D., 1522 Graham Court, S.E., Rochester, MN 55901.

Internal Medicine: Board certified. Prefers coastal area. Solo, associate or group practice. Leaving service in March of 1976. 35 years old. Board certified. James D. Levy, M.D., 14009 Eagle Court, Rockville, MD 20853.

Internal Medicine (Gastroenterology): Certified in 1974. Connecticut license. Available July 1, 1976. Presently at Yale as Fellow. John E. Madsen, Jr., M.D., 135 Florence Road, Apt. 2C, Branford, CT 06405.

Internal Medicine: Board eligible. Available July 1, 1976. Presently at New England Deaconess Hospital. Group or associate practice. Craig W. Markert, M.D., 40 St. Paul Street, Brookline, MA 02146.

Internal Medicine: Presently available. Board eligible. Completing training at St. Mary's Hospital, Long Beach, California. Rosario Noto, M.D., 19143 Appletree Court, Cerritos, CA 90701.

Internal Medicine (Cardiology): Presently available. Wishes to relocate in Connecticut. Board eligible. 39 years old. Desires solo or associate practice. Joseph G. Piroch, M.D., Brooks Road, R.D. No. 4, Meadville, PA 16335.

Internal Medicine (Oncology): Diplomate in internal medicine. FLEX. Desires group or associate practice. Completing Fellowship in Hematology at Hahnemann Hospital in Philadelphia. Available July 1976. C.R. Sarker, M.D., 118 B Norristown State Hospital, Norristown, PA 19401.

Internal Medicine (Gastroenterology): Connecticut License. Board eligible. Completing Fellowship at Yale. Group or associate practice. Desires to remain in Connecticut. Available now part time. Full time after July 1977. Write J.R., M.D., c/o CSMS.

Internal Medicine (Endocrinology): Board eligible. Available July 1976. Presently Fellow at University of Illinois Hospital, Chicago. 29 years old. I.V. Thakkar, M.D., 1926 W. Harrison Street, Apt. No. 1110, Chicago, IL 60612.

Internal Medicine (Gastroenterology): Board certified. Presently on active duty in U.S. Navy. Available July 1976. Solo, group or associate practice. Harvard Medical and Beth Israel in Boston. 30 years old. Mass. and N.J. licenses. John D. Wojcik, M.D., 100 Denver Avenue, Westmont, N J 08108.

OPPORTUNITIES FOR PRACTICE

(If no name is listed, contact the Physician Placement Service for more details.)

Pediatrics: Public Health Medical Consultant for Maternal and Child Health and Crippled Children programs. Contact J.J. Crowly, Personnel Administrator, Connecticut State Department of Health, 79 Elm Street, Hartford, CT. 06115.

Family Practice: Unusual opportunity, active practice, associate needed. Convenient location. Home and office space available. Call (203) 795-5801.

Family Practice: Town of Bolton, Conn., needs a practitioner. Contact CSMS.

Family Practice: Middlesex County. Excellent opportunity to assume practice. Affiliated with Middlesex Memorial Hospital a few miles away.

OB/GYN: Women's Health Service needs Board eligible or certified physician with Conn. license. 40 to 10 hours per week. Contact Harriet Bograd, 19 Edwards Street, New Haven, CT — 777-4781.

Emergency Room Positions: Contact EMS Department: Middlesex Memorial Hospital, Middletown; Milford Hospital, Milford; World War II Memorial Hospital, Meriden; Wesson Emergency Associates, Springfield, Mass.; Meriden-Wallingford Hospital, Meriden; Charlotte Hungerford Hospital, Torrington.

OB/GYN: Study indicates that community could support new, three man group. Details available. Contact CSMS.

Industrial Medicine: Two West Haven firms need part time coverage. Employment physicals. On call coverage.

Family Physicians: Community could support two physicians. Contact: Mrs. B. Nielson, 132 Main Street, Collinsville, CT— 693-2131.

Family Physicians: State Department of Mental Health has several openings. Contact Mr. R. R. Tacey, 90 Washington Street, Hartford, CT—566-4221 or 566-5493.

Internal Medicine: Three man group in search of a fourth. Coastal city. 360 bed hospital. Contact William J. Murray, Jr., M.D., 447 Montauk Avenue, New London, CT.

Ophthalmology: Five listings presently available in various parts of the state. Contact CSMS for details.

Pediatrics: Opportunity to join active practice in West Haven area. Contact CSMS.

General Surgery: Associate needed by July 1976 in centrally located city. Excellent 300-bed hospital. Write General Surgeon, c/o CSMS.

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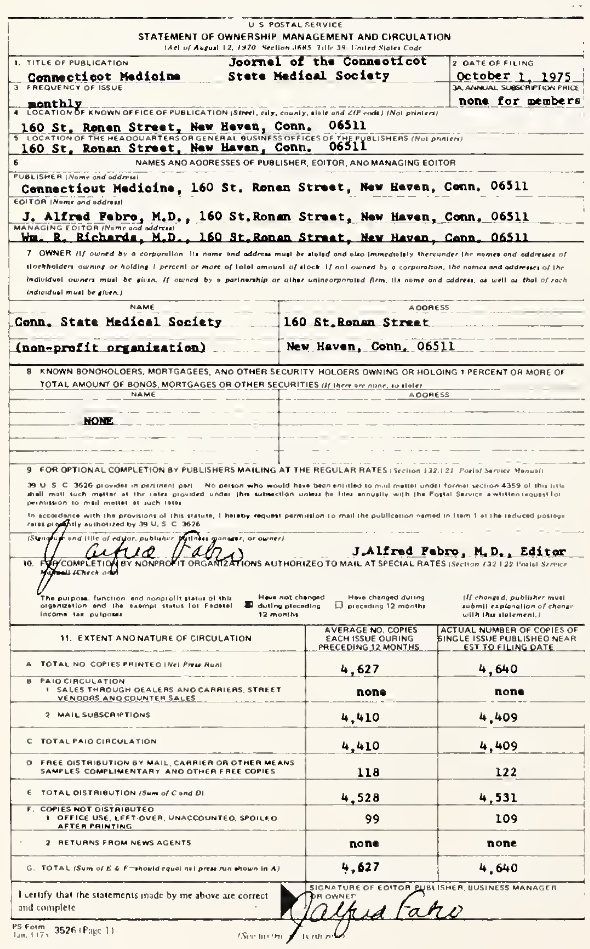

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INDEX TO ADVERTISERS

Aetna Life & Casualty 754
Boehringer Ingelheim, Ltd. .... IFC
Burroughs Wellcome Co. 752
Classified Advertising 749
Connecticut Blue Cross 720
Arthur W. Eade, Insurance 756
Elmcrest Psychiatric Institute 740
Geigy Pharmaceuticals .... bet. 748 & 749
Group Insurers, Inc. 758
Kenwood Laboratories 714, 735
Eli Lilly & Co. .... FC
Eleanor C. Mayer, Realtor 724
Merck, Sharp & Dohme .... bet. 724 & 725
Merrill Lynch, Pierce, Fenner & Smith, Inc... 4
Pharmaceutical Manufacturers Assoc. .... bet. 732 & 733, 733
Physicians Planning Service Corp. 758
Roche Laboratories .... 2 & 3, bet. 732 & 733, ... 752, 753, IBC, BC
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The Journal of the Connecticut State Medical Society

VOLUME 39, DECEMBER 1975, NUMBER 12

Alphonse DelPizzo	Cardiovascular Surgery at a Community Hospital	759
Gary E. Friedlaender, Rollin M. Johnson Richard A. Brand and Wayne O. Southwick	Treatment of Pathological Fractures	765
Cyril Newman, Carol Jacobs and Brenda Roberts	Post-Abortal Tetanus	773
Lee Sataline and David Lowell	Delayed Hepatotoxicity from Methyldopa	775
Morton D. Grant and Herbert I. Horowitz	Sickle Cell Hematuria Controlled by Epsilon Aminocaproic Acid	777
Lawrence S. Cohen	Advances in Clinical Cardiology	779
James H. Root, Jr.	PSROs in Connecticut	793
Joseph Robert Anthony and Lucille Semeraro	Mobile Emergency Cardiac Care Unit	797
Joan L. Venes and Beckett Rodgers	Yale-New Haven Hospital Spina Bifida Center and the Pediatric Nurse Practitioner	801
Robert Jay Lifton	Advocacy and Corruption in the Healing Professions	803
Stanley Hauerwas	Must a Patient Be a "Person" to Be a Patient	815
Editorials: Herbert S. Sacks	Privacy and Title XX	786
Fred Fabro	PSROs	786
Guy W. Van Syckle	The President's Page	781
Robert U. Massey	Reflections from the Dean's Office	783
Roy N. Barnett	Laboratory Notes	823
Letters to the Editor: Walter A. Schloss	Malpractice and the Gallup Poll	791

Table of Contents: page 1

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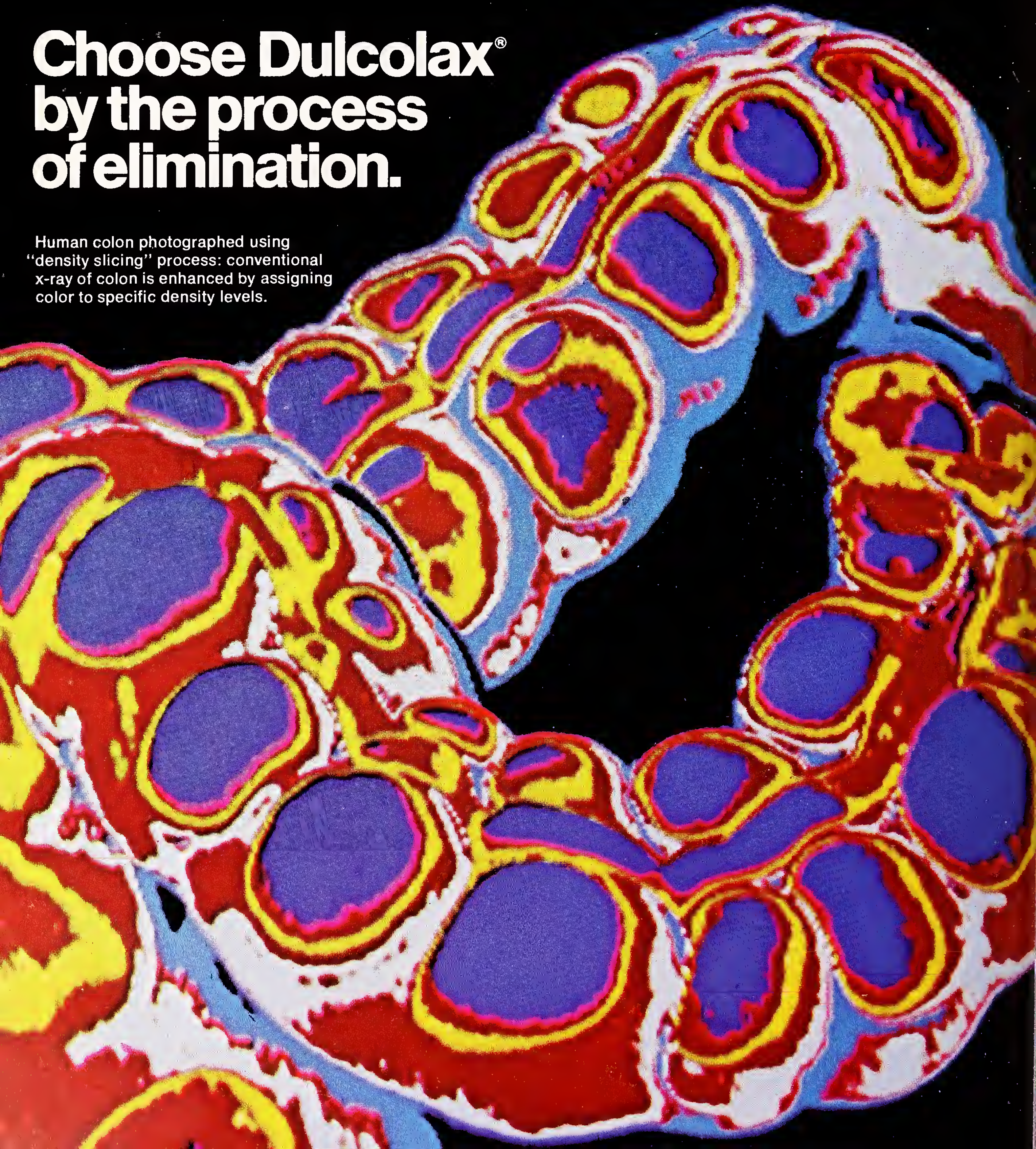

Human colon photographed using "density slicing" process: conventional x-ray of colon is enhanced by assigning color to specific density levels.

Connecticut Medicine

DECEMBER, 1975
Vol. 39/No. 12

CONTENTS

scientific:

Six Year Experience in Cardiovascular Surgery at a Community Hospital, *Alphonse DelPizzo, M.D.* 759

Treatment of Pathological Fractures, *Gary E. Friedlaender, M.D., Rollin M. Johnson, M.D., Richard A. Brand, M.D., and Wayne O. Southwick, M.D.* 765

Post-Abortal Tetanus, *Cyril Newman, M.D., Carol Jacobs, M.B., B.S. and Brenda Roberts, M.B., Ch.B., D.A.* 773

Delayed Hepatotoxicity from Methyldopa, *Lee Sataline, M.D., and David Lowell, M.D.* 775

Sickle Cell Hematuria, Controlled by Epsilon Aminocaproic Acid, *Morton D. Grant, M.D., and Herbert I. Horowitz, M.D.* 777

Advances in Clinical Cardiology, *Lawrence S. Cohen, M.D.* 779

editorials:

Title XX: A Major Threat to Privacy and a Setback for Informed Consent 785

PSROs 786

departments:

The President's Page 781

Reflections from the Dean's Office 783

Letters to the Editor:
Walter A. Schloss, M.D. 791

From the Executive Director's Office 819

Physician Placement Service 825

special articles:

PSROs in Connecticut—Past, Present, and Future, *James H. Root, Jr., M.D.* 793

A Mobile Emergency Cardiac Care Unit: Analysis of Initial Data, *Joseph Robert Anthony, M.D. and Lucille Semeraro* ... 797

Yale-New Haven Hospital Spina Bifida Center: Introduction of the Pediatric Nurse Practitioner in a Program of Comprehensive Management, *Joan L. Venes, M.D. and Beckett Rodgers* 801

Advocacy and Corruption in the Healing Professions, *Robert Jay Lifton, M.D.* 803

Must a Patient Be a "Person" to Be a Patient, *Stanley Hauerwas, Ph.D.* 815

miscellaneous:

Month in Washington 789

Book Reviews 818

Books Received 818

New Members of the State Society 822

Laboratory Notes 823

In Memoriam 824

Information for Authors 829

Yearly Index 830

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Six Year Experience in Cardiovascular Surgery at a Community Hospital

Alphonse DelPizzo, M.D.

Abstract—A critical analysis of a six year cardiovascular surgical experience at the Hospital of St. Raphael, New Haven, Conn. is presented in order to improve the future management of patients demanded in this field of endeavor. Of the 355 procedures reviewed, 128 cases were presented for the time span encompassing 1969-1973, while 63 of 68 cases were reviewed in the year 1974. The combinations of techniques and agents utilized were reviewed with a noted mortality of 14.9% in the 1969-1973 period and a 22.2% mortality in the year 1974.

In providing anesthesia for open heart surgery at the Hospital of St. Raphael, the Department of Anesthesiology has been challenged by the requirements for rigid supervision of intricate life-support equipment and by the frequent necessity to use knowledgeable resuscitation measures. The general principles, however, that govern good anesthesia for these techniques are fundamentally those already established for the optimum care of all patients undergoing major surgery. The unique management problems noted in this surgery have been solved, for the most part, by the development of life-support systems capable of assuming the functions of the cardiorespiratory system for reasonable periods of time.

The advances in cardiovascular surgery over the past few years have been accompanied by a steady improvement of results, as noted in the medical literature. This improvement has not been due to changes in anesthesia, however, since simple and safe techniques have been available from the start and have been at best only slightly modified of late. Any improvement must be attributed to better surgery, better bypass, better understanding of cardiac pathophysiology, and better preoperative and postoperative care. It is with reference to the care of the sick patient and particularly with regard to mechanical ventilation that anesthesiologists have made significant contributions. The most important single factor governing the success of cardiac surgery certainly remains the quality of the operation. There remains little place for the occasional or inexperienced surgeon or anesthesiologist in open heart surgical theatres.

Through a critical analysis of our past experience, we are continually attempting to improve the surgical and anesthetic management much demanded in this field of endeavor. A comparative evaluation of measured parameters has also aided us in the isolation of rectifiable factors that may alter the mortality-morbidity of these patients and thus be a common factor in the success of future bypass procedures. Anesthesia for cardiac surgery has always meant the sophisticated management of seriously ill patients, and, of necessity, a need to understand the associated pathophysiologic mechanisms inherent in these procedures.

Within the past six years, the number of cardiovascular procedures has increased in number only with respect to the patients with coronary artery disease[1] since the incidence of valvular disease has changed little in recent years presumably due to the relative decrease in rheumatic heart disease associated with the use of antibiotics.

Extracorporeal procedures have now progressed to the point of being a routine procedure in many centers throughout the nation with a very low morbidity and mortality attributable to the technique itself.

One may note, however, varying mortality figures in scanning the present day cardiovascular valvular prosthesis surgical literature. Pietras, Long, Rosen et al[2] in 1974 reported a 16-20% mortality for aortic valvular disease utilizing a Starr-Edwards prosthesis; Braunwald and Morrow[3] in 1968 reported a 4.3% mortality with mitral valvular prosthesis; Spencer, Reed et al[4] in 1970 reported operative mortality figures for the following lesions: mitral 11%, aortic 12%, aortic and mitral combined 14%, mitral and tricuspid combined 0%: W.G. Austen[5] in 1973 reported an operative mortality of 5% for aortic prosthesis procedures; Finnegan[6] reports a 1% mortality for mitral prosthesis; and finally, Kirklin[7] in 1973, reviewing Dr. Starr's statistics on aortic value surgical patients, noted a 5 year survival of greater than 75% of his patients.

The review of mortality in today's literature involving coronary artery disease surgery similarly notes varying ranges from a low value of 1-2% in uncomplicated cases rising to a high of 10% in coronary patients with severely impaired left ventricular function.[8,9,10,11]

Within a five year period of 1969 through 1973, 287 surgical procedures requiring cardiopulmonary by-

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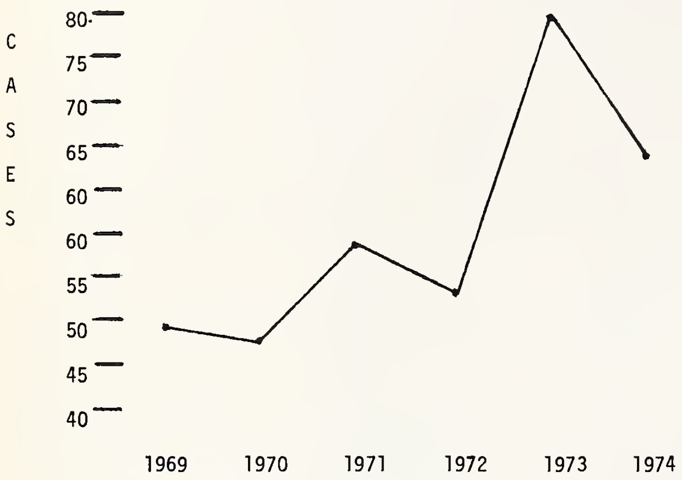
pass were performed at the Hospital of St. Raphael. As noted in other institutions, there was a 68% increase in case load for these procedures in our Hospital when comparing the 1969 and 1973 operative census; however, in 1974, the number of open heart procedures at our institution decreased to 68 total cases, a decrease over the previous year. (Table 1).

Table 1
Incidence of Open Heart Surgery 1969-1974



The problems confronting the anesthetist by patients presenting themselves for surgical treatment of cardiac disease have a great deal in common regardless of the precise nature of the lesion. In addition, cardiac surgical patients often have impaired function of organs other than the heart, Adequacy of pulmonary, hepatic, and renal function are necessarily determined preoperatively via a careful evaluation of sophisticated clinical and laboratory data. Certainly there is little margin for safety in these patients, with any complication or mishap leading to the patient's demise.

Because the conditions that bring these patients to cardiac surgery are almost always chronic, these patients usually have been taking a variety of drugs such as cardiotonics, diuretics, antihypertensives and tranquillizers. Thus, a patient's drug history is most important. Since many of these drugs have a direct bearing on the patient's intraoperative and postoperative management, it has been our policy to be fully informed of said drug uses before surgery, but do not eliminate these drugs preoperatively except for digitalis preparations because of the incidence of digitalis-induced arrthymias noted in patients after cardiopulmonary bypass operations with therapeutic digitalis levels. Most important in preoperative management of these patients, however, is that the anesthetist reassure the patient as to the prospective surgery and its attendant risks, as well as explain the nature and purpose of continued postoperative tracheal intubation and mechanical ventilation. The anesthetist must assess the preoperative condition of every cardic patient much more carefully than that of a patient undergoing any other type of surgery. His findings may not only affect his choice and technique of anesthesia but may also forewarn the possible complications noted intra or postoperatively. The anesthetists evaluation is based on the history, investigations, diagnosis provided on chart, and, most important, his own clinical assessment of the patient. Concomitant to this evaluation is the preoperative visit by the total critical care team to help assuage the anxiety of these patients, discuss the subjective aspects of the procedure that are of such great concern to the cardiac patient, and to acquaint the patient with the nuances of the post surgical period without minimizing the risks inherent in the procedure.

Prior to surgery, many parameters for clinical evaluation are performed to measure the patients' cardiac, pulmonary, renal and hematologic norms. These evaluations include history, physical examination, chest X-ray, cardiac catherization, EKG, CBC, prothrombin time, prothrombin consumption time, platelet count, euglobulin lysis time, blood chemistry profile including a blood sugar and electrolytes, serum and urinary creatinines, enzymes (SGOT, LDH, CPK), blood gases, pulmonary ventilation studies and daily weights.

As to premedication, our approach has tended to vary with the age of the patient. The preoperative medication in children consists of a narcotic combined with a sedative such as pentobarbital or secobarbital. While children under one year of age were given no preoperative medication, all children over one year of age and weighing more than 25 kg are given 0.1 mg/kg morphine sulphate with 1 mg/kg secobarbital sodium or pentobarbital intramuscularly.

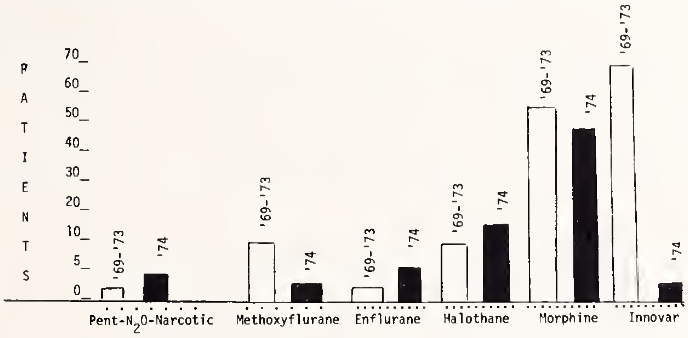
Adults are given preoperative medication usually consisting of a barbiturate (pentobarbital or secobarbital 100 mg p.o.) or diazepam (10 mg p.o.) as a bedtime medication. These same drugs are repeated two hours before surgery followed one hour prior to surgery by a narcotic, usually morphine sulphate .1 mg/kg IM. In adults as in children, atropine is almost never used with the notable exception of the rare adult patient with sinus bradycardia.

On arrival to the Operating Room, all patients were monitored via an electrocardiograph, central venous pressure monitor, central arterial pressure monitor, temperature thermistor probe, pulse rate monitor, serial blood gases with calculated base deficits, serum electrolytes and hematocrits.

Of the 355 procedures reviewed, only 128 cases were selected for the time span encompassing 1969-1973 while 63 of 68 cases were reviewed in the year 1974. This lesser number of cases was evaluated because of inadequate recording of either preoperative, intraoperative or immediate postoperative parameters. All of the cases reviewed had reported multiple blood gases for the preinduction period, bypass period, and postbypass period as well as accurate notations of anesthetic agents; preoperative and intraoperative drugs utilized; recorded length of pulmonary bypass and aortic occlusion times; type of pump oxygenator used; use of hypothermia; use of induced bypass fibrillation either electrically or via pericardial cold, saline; determination of serial K+, blood gases, hematocrit values, and base deficits every 15 minutes during bypass; method and use of defibrillation postoperatively; heparin-protamine titration values; and blood coagulation studies including serial plasma hemoglobin levels during and after bypass.

Many combinations of agents and techniques have been utilized since the advent of open heart procedures in 1953, all featuring full oxygenation and careful scrutiny of the agents utilized. These techniques have included both intravenous and inhalation agents including halothane; enflurane; methoxyflurane; "balanced technique" with thiopental, nitrous oxide, oxygen and narcotic; droperidol-fentanyl-nitrous oxide ("neuroleptanesthesia"); and lastly, morphine sulfate-oxygen or morphine sulphate-nitrous-oxide-oxygen techniques. (Table 2)

Table 2
Comparative Use of Anesthetic Agents in '69-'73 vs. 1974.



Presently morphine anesthesia[12] has found great favor for the anesthetic management of these procedures, particularly in seriously ill patients due to the positive effects of morphine on the circulatory system. The advantages of morphine anesthesia have been noted to be: minimal myocardial depression, analgesia for the patient who would not tolerate an anesthetic, possible ventilation with 100% oxygen, no potentiation of myocardial irritability when catecholamines are required, smooth transition into the postoperative period with good retention of endotracheal tube and mechanical ventilator without tracheostomy, and good postoperative analgesia.

The cardiac effects of morphine[13] appear to be secondary to its actions on the central nervous system and the peripheral vasculature. Stimulation of the central nervous system by morphine leads to a central sympatholysis and activated carotid baroreceptors ultimately increasing sympathetic activity with an increase in cardiac contractility and variable response in vascular tone. The peripheral vascular bed of the circulatory system responds to morphine with an increase in capacitance by a direct action with the adrenergic blockade, while the resistance decreases due to the adrenergic blockade, direct action and histamine effect.

The circulatory response to morphine which is variable is determined primarily by the patient's circulatory status. Hypovolemia, increased sympathetic tone, reverse Trendelenburg position, etc. are all factors which may predispose the patient to hypotension under morphine, whereas a patient with pulmonary edema who is hypervolemic and has increased sympathetic tone under the influence of morphine may have an increase in blood pressure due to a decreasing return to an already overloaded heart allowing it to function more efficiently. In the supine, normovolemic patient, the circulatory effects of 1 mg/kg morphine appear slight.

Morphine anesthesia may be induced in adults with hypokinetic left ventricular function, with oxygen alone in a dosage of 1-3 mg/kg of body weight. Patients with a normal left ventricular function may be induced with morphine administered intravenously usually at the rate of not greater than 5 mg/min to which was added a nitrous oxide-oxygen mixture to a total morphine dosage of approximately 1 mg/kg but never more than 3 mg/kg. Muscle relaxants such as succinylcholine, d-tubocurare or pancuronium may then be added for intubation and surgery.

Neuroleptanesthesia patients were induced with a primary loading dose of droperidol 0.15 mg/kg followed by incremental doses of fentanyl up to a maximum total dosage of 0.015 mg/kg. While this intravenous mixture was administered, the patient was concomitantly given an inhalation mixture of 50% nitrous oxide and 50% oxygen until consciousness was lost. Muscle relaxants were then added for intubation and surgery. The nitrous oxide regimen was thus continued with analgesia provided by additional fentanyl doses of 0.05 mg intravenously.

Despite massive pain stimuli, large doses of morphine sulphate and fentanyl have consistently produced reliable analgesia. The amnesia produced by the neuroleptic, however, appears more reliable than that produced by morphine sulphate-oxygen technique.

Our statistics note a preponderance of acquired valvular disease cases which fall primarily in the 50-70 year age group. As to sex differentiation, our study group in the years 1969-1973 had a preponderance of males to females, while in 1974, there was an increase in female subjects to more than 50% of the total number for the year.

Children usually with congenital cardiac lesions were managed in slightly different mode of anesthetic technique and agent than in the adult. In children, halothane-oxygen continues to be our agent of choice, utilizing oxygen flow rates of 2-5 L/minute with incremental doses of 0.5% halothane until consciousness was lost. The Jackson Rees non-rebreathing technique was used for children under 30 lbs. body weight while an adult circle absorber was used for older children above this weight value. Intubation was facilitated usually by the use of a short acting muscle relaxant as succinylcholine, while anesthesia was maintained with halothane-oxygen and long acting muscle relaxants such as pancuronium or d-tubocurare.

Some institutions have ceased using halothane because of its myocardial depressant effect, although this may admittedly be negligible at a concentration of 0.5% or less.[14] Other reasons for halothane's discontinued usage may include its incompatibility with sympathomimetic drugs, its expense, and the small risk of producing a sensitization hepatitis which would confuse the diagnosis in patients who not infrequently have postoperative jaundice for other reasons.

Ventilation in all procedures was controlled either by hand or by a volume-limited ventilator with a tidal volume of 10-12 ml/kg and a concentration of oxygen never less than 30%. The alveolar-arterial oxygen tension gradient rises during cardiac surgery partly because of the rise in venous admixture, partly because of a fall in cardiac output, with hypocapnia,[15] does not necessarily occur in heart disease and is unpredictable.[16] It is only during bypass that ventilation is stopped, permitting the lungs to collapse at an airway pressure level of 10 cm H^2O utilizing an oxygen helium mixture. Provided that the lungs were fully expanded at the end of surgery and that any pneumothorax, hemothorax, or effusion has been evacuated, no apparent differences in the incidence of post-operative lung complications have been noted.[17]

The heart-lung pumps utilized during these procedures have been a thin film Mayo-Gibbons oxygenator or a Temptrol disposable bubble oxygenator with the addition of heat exchange units. The oxygenator is primed with whole blood to which sodium bicarbonate, calcium chloride, potassium chloride and heparin were added. The adequacy of perfusion during bypass was judged by the pump flow rate, central arterial pressure, central venous pressure, serial blood gases, and urine volume excretion.

Of the cases studied for the years 1969-1973, 87 involved the use of the Temptrol oxygenator while 41 were done with the Mayo Gibbon pump. While in 1974 every case reviewed involved the use of the Temptrol oxygenator, it has been asserted that modern bubble oxygenators, although efficiently coping with large flows of blood, appear to be more traumatic to formed blood elements than the screen oxygenators. Our studies note that at levels of plasma hemoglobin below a 150 mg/100 ml plasma level, the plotted levels obtained with the Temptrol unit closely resembles the overall plasma hemoglobin below a 150 mg/100 ml plasma level, the plotted levels obtained with the Temptrol unit closely resembles the overall plasma hemoglobin levels reflected on the Mayo Gibbon pump; however, there were an increased number of cases manifesting a 300 mg/100 ml or more plasma hemoglobin level with the Temptrol unit. This increase certainly must be correlated with the length of bypass and aortic occlusion time.

The adequacy of tissue perfusion during bypass has been judged by the pump flow rate (approximately 45-85 ml/kg/min), radial artery pressure and urinary output. Since the preservation of renal function during extracorporeal circulation is basic to preferential oxygen perfusion, the urinary output in this group of 128 patients was monitored closely. There were 16 cases in whom was noted a diminution in hourly urinary output and/or a persistent hematuria. It was noted that patients undergoing bypass procedures under a narcotic anesthetic technique produced significantly less urine volume during bypass than the patients undergoing the procedure under an inhalational anesthetic technique. This same group of patients under a narcotic technique appeared to require a significantly larger amount of plasma volume replacement post-bypass to satiate the "third space" deficit than patients under an inhalation technique. This phenomenon has been noted by others.[18]

Hypothermia in the range of 34°C-30°C was used in every case as an adjunct to provide adequate tissue perfusion by reducing metabolic demands of the myocardium as well as allowing the surgeons an extra margin of operative time on bypass. There were only two instances in the cases reviewed that the hypothermia level was allowed to drift to a 25°C level.

Blood gas evaluation was another basic tool utilized along with blood electrolytes to judge the efficacy of the pump oxygenator[19] as well as the anesthetic component. Frequent blood gas determinations were made in all patients, that is preoperatively, during anesthesia induction, post-induction, pre-bypass, bypass, immediately post-bypass, at the end of the surgical procedure, and in the recovery phase. PaO_2 was kept between 100-150 Torr when possible by increasing or decreasing volumes of oxygen gas flow through the oxygenator. $PaCO_2$ was kept at 35 to 45 Torr by increasing or decreasing the volume of 5% CO_2 in the oxygenator gas mixture. It was noted that during hypothermia, the CO_2 solubility increased necessitating an increase in CO_2 levels in the oxygenator gas mixture if one wished to prevent respiratory alkalosis; the reverse was true during rewarming phase. The ph corrected for temperature changes was kept between 7.35 and 7.45, acidosis or alkalosis noted beyond this range was shown to be undesirable. During bypass, the ph was maintained within relatively normal limits primarily by the adequacy of the oxygenator in eliminating carbon dioxide. $PaCO_2$ values were noted to act as determinants of the efficacy of both pulmonary ventilation and gaseous exchange.

In our cases, in most instances, the preinduction blood gas values were noted to fall within the limits of normality, while bypass gases appeared to fall either close to the upper limits of normality or to the lower limits of alkalosis. This slight alkalosis usually returned to normal levels, however by the end of pulmonary bypass.

Blood gas parameters were studied in 15 patients selected at random. Eight patients of the 15 studied had preoperative blood gas values within the range of normality, 2 patients had normal ph values but low $PaCO_2$ values, whereas one patient was noted to be in outright metabolic acidosis and 2 patients in metabolic alkalosis.

During bypass, all 15 patients studied maintained near normal ph values; however, 5 patients had decreased $PaCO_2$ values and only 1 patient had an elevated $PaCO_2$. Post bypass levels were noted in only one patient to be distinctly acidotic and one patient was alkalotic.

Preoperative normal ranges for blood gas parameters were noted not to be an index in prognosticating post-bypass morbidity and/or mortality. One may note, however, that decreased $PaCO_2^-$ levels rather than increased $PaCO_2^-$ levels were noted more often in the increased mortality/morbidity group. Abnormal bypass and post-bypass blood gases in most instances remained abnormal in the increased mortality-morbidity group, while the normal group was noted to have a consistent amelioration of blood gas values in the post-bypass period. The blood gas results of the patients succumbing in the postoperative period were distinctly more abnormal and remained persistently more abnormal than the group with a lesser mortality ratio.

The overall mortality for the 128 cases studied in 1969-1973 was 14.9%. In comparison, a review of 63 cases performed during 1974 manifested a 22.2% mortality with a 6.3% mortality occurring in the Operating Room and a 15.9% mortality in the postoperative period.

The role of the anesthetic agent in the causation of mortality and morbidity was reviewed extensively. In the cases reviewed, there was a minimum of morbidity and no mortality in patients administered a halothane-oxygen anesthesia in the 1969-1970 period. The highest mortality-morbidity figures were noted with the Innovar-N_2O-O_2 technique for this same period of time; however, one should note that the number of neurolept anesthesia cases outnumbered all other techniques utilized during the time span. The morphine-oxygen anesthetic technique appeared to afford the lowest incidence of morbidity/mortality in this 1969-1973 series. The small methoxyflurane-O_2 group in the years 1969-1973 was noted to have a morbidity-mortality ratio above the morphine and halothane groups, respectively.

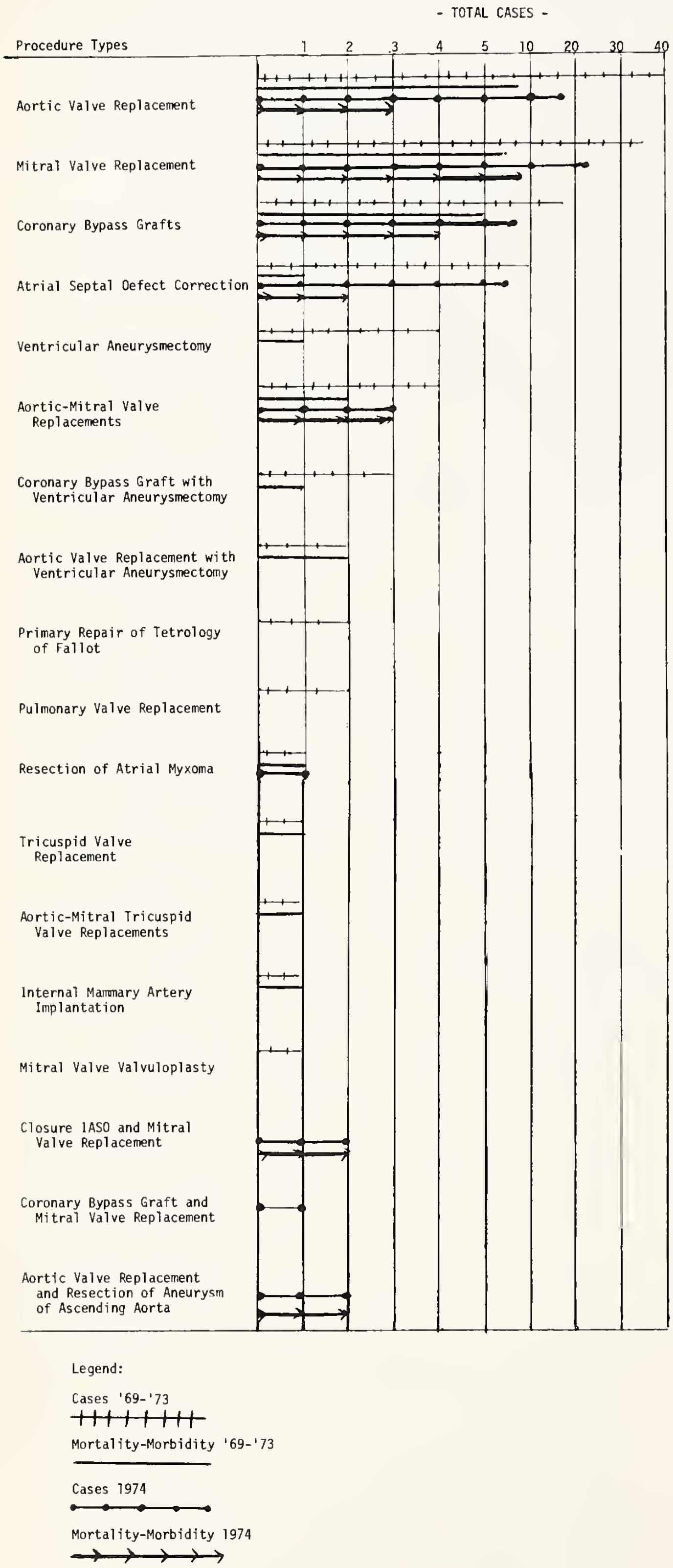
In the 1974 review, however, the greatest mortality and morbidity was noted in the morphine anesthesia group. Again, one should note that the morphine anesthesia group outnumbered in this period all the other anesthesia techniques combined. Halothane followed morphine in the greatest incidence of mortality-morbidity figures, followed, in turn by the Enflurane group. No morbidity or mortality was noted in either the Innovar or Thiopental-N_2O-narcotic groups reviewed.

A review of the cases performed in the 1969-1973 series, as well as the 1974 series noted a preponderance of valve prothesis replacements over coronary artery bypass procedures. (Table 3). Although males far outnumbered females in the 1969-1973 study group, it appeared that sex was not related to the occurrence of increased morbidity and mortality. Increased age, however, was definitively related to increased mortality-morbidity figures.

As has been noted in other studies, a prolonged bypass time has a direct relationship to increased morbidity and mortality. Certainly the incidence of all problems increased sharply in the group with a 90 minute or more bypass time. After 180 minutes of bypass time, the increase in complications ceased its linear rise and all cases with approximately 300 minutes of bypass had a plateauing of mortality figures. These figures can be correlated with our average bypass time for the various lesions studied in 1974, i.e., mitral valve replacement 108 minutes, aortic valve replacement, 145 minutes; and coronary artery bypass graft, 193 minutes.

Skill in operative and postoperative management can only be acquired by constant attention to details over the years as well as a constant awareness of progress. This account of cardiac anesthesia and

Table 3
Comparison of Procedures Performed During 1969-1973 versus 1974



surgery based on our current practice at the Hospital of St. Raphael must surely be incomplete for it is clearly impossible to cover every aspect in a relatively short article.

Certainly, while open heart surgery may apparently proceed smoothly from start to finish, there is always danger of complications, some technical and most avoidable. The incidence of complications rises when cardiopulmonary bypass is prolonged and may include low cardiac output states, cerebral damage, bleeding diathesis, hemolysis, postoperative respiratory distress, dysrhythmias, embolization, cardiac arrest, difficulty in defibrillation, etc. It is, however, somewhat difficult to separate the contribution of bypass to these conditions since prolonged perfusion is required in patients whose condition is altered by the effects of complex lesions.

All in all, the anesthetic techniques for open-heart surgery appear to differ slightly from those used for other types of major surgery with emphasis being placed on a safety, light planes of anesthesia, and simplicity. The detection and treatment of intraoperative and postoperative complication demands a high standard of clinical awareness and judgment, as well as a thorough knowledge of pathophysiology of the involved lesions, pharmacology of drugs and their interactions, and a thorough knowledge of resuscitative techniques.

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Treatment of Pathological Fractures

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Abstract—The incidence of pathological fractures of bone secondary to metastases has increased as a result of improved cancer therapy and lengthened patient survival. Conservative therapy with traction or casts require prolonged immobilization and bedrest and may interfere with concurrent radiation therapy. Newer orthopaedic techniques may provide effective surgical stabilization, relief of pain, improved function, and a more favorable quality of survival in selected cases. This article is intended to bring the newer solutions to this problem to the attention of the many specialities involved in the treatment of neoplastic disease. Cases are presented to illustrate some of the surgical indications and techniques.

Introduction

Improved cancer therapy and subsequently prolonged survival have increased the incidence of pathological fractures due to metastatic neoplasm; [1,2] and, consequently, these fractures are demanding more frequent attention by physicians. The highly emotional nature of terminal cancer for the patient and his family, and the diverse and sophisticated methods of dealing with this disease often require the involvement of physicians specializing in general medicine or family practice, psychiatry, and subspecialties of pediatrics, medicine, radiology, and surgery. Newer and more aggressive approaches by orthopaedic surgeons to impending and completed fractures of bones weakened by malignancy offer effective relief of pain and improved function and should be of interest to physicians caring for these patients.

Epidemiology

It is estimated that approximately 365,000 people will die of cancer during 1975 in this country, making it second to heart disease as a cause of mortality.[3] Any cancer can metastasize to bone; and with prolonged survivals from improved medical, surgical, and radiological therapy, it is estimated that one-quarter of cancer patients will have skeletal metastases at the time of death and that 9 per cent of these people will sustain a pathological fracture.[4] The majority of tumors responsible for bony improvement arise in breast, lung, prostate, thyroid, and kidney.[1,2,4-7] Most reported series of surgically treated pathological fractures contain a preponderance of breast carcinoma, 33 to 66 percent,[2,4-9] which should not be surprising since autopsies have shown that 85 per cent of these women have skeletal lesions at the time of death.[10]

The spine and femur are the most common sites of fracture, with the proximal femur representing 50 to 90 per cent of the surgically treated lesions.[2,4,11-13] The bulk of remaining metastases which require stabilization are found in the humerus and less frequently the tibia.[1,2,4,12] Survival following pathological fracture varies with the nature of the primary neoplasm; as a group, however, 40 to 50 per cent of these patients survive more than six months and nearly one-third are alive one year following the fracture.[2,4,6,8,14,15]

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The opinions or assertions contained herein are the private ones of the authors and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

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Treatment

Normally fractures of the extremities may be treated without surgery; but this often necessitates lengthy periods of bedrest, incumbered mobility, and increasingly difficult self-care. In a patient with already compromised health and life expectancy, conservative management may require too much time and immobility. For this reason internal fixation of pathological fractures has been advocated in the literature for at least 25 years.[4,7,9,10,12-14,16-20] It was, however, slow to win general acceptance until more recent evidence has shown that pathological fractures heal normally,[11,19,21] even after low dose irradiation,[12,14] and probably better with surgical stabilization.[21,22] Incisions may also be expected to heal without difficulty, and the fear of spreading or seeding the tumor to the incision or distant sites has proved unfounded.[6,10,12] The use of polymethylmethacrylate, a bone "cement," has further liberalized the indications for internal fixation,[2,24,25] It may be used to fill a structural defect in bone, disperse forces across a broader surface area or reinforce an internal fixation device when the quantity or quality of bone is deficient.

Strong consideration should also be given to internal fixation of impending fractures. Pain associated with a lytic lesion 2.5 centimeters in diameter in any location in a tubular bone or a lesion occupying more than 50 per cent of the circumference of the cortex should be considered due to an impending fracture and prophylactic internal fixation is indicated.[10,20] Painless lesions including more than 50 per cent of the cortical circumference of a weight bearing bone are in jeopardy of fracture and stabilization should be considered. Radiation therapy alone will usually provide excellent pain relief in a metastatic lesion to bone and is often the treatment of choice for lesions not threatening fracture,[2,10,22] but it will not improve stability of the bone if fracture is imminent. Prophylactic internal fixation offers the additional benefits of maintaining the normal alignment of the bone, the operative procedure is usually much easier before rather than after fracture has occurred, and the presence of the fixation device may allow the patient to remain ambulatory and comfortable even if fracture occurs post-operatively.

In selecting patients who would benefit from operative treatment of a pathological fracture, it is important to consider the patient's general condition. Silent primary tumors occasionally present as a pathological fracture, often from the kidney or thyroid (both tend to be very vascular) and a diligent pre-operative search is mandatory.[1] The effect the primary tumor may have on the patient's ability to undergo an appropriate anesthesia, possible alterations in clotting mechanisms, and a life prognosis of at least two to three months need to be considered. The extent to which the rest of the particular bone in question is involved, and indeed the remainder of the skeleton, can often be most efficiently surveyed using bone scanning techniques (^{99} m-technetium polyphosphate). Adjunctive therapy including irradiation of the involved bone, hormonal therapy in the case of breast or prostatic carcinoma, and occasionally neurosurgical procedures designed to alleviate discomfort[23] should be considered and their proper timing determined by the appropriate consultants.

Illustrative Case Reports

The following cases will serve to illustrate the advantages of operative treatment of properly selected pathological fractures:

Case Number One (1) is a 46 year old male admitted to the West Haven Veterans Hospital with a pathological fracture of the right hip metastatic from the prostate. Eighteen months prior to this, the patient presented with paresis of the lower extremities and urinary incontinence. A diagnosis of adenocarcinoma of the prostate metastatic to the spinal canal was made; and he was treated with decompressive laminectomy of the thoracic spine from T-8 through T-10, post-operative irradiation totaling 2500 rads, orchiectomy, diethyl stilbesterol, and 5-fluorouracil. He ultimately regained most of the function of his lower extremities. His present admission followed the onset of severe pain about his left hip while sitting down. Radiographs (fig. 1-A) confirmed the diagnosis of a pathological fracture of the right hip in the subtrochanteric area with extensive loss of cortical bone. Despite his metastatic disease, his general condition was satisfactory; and it was felt that as much as two years additional survival could be anticipated. Treatment alternatives were prolonged traction and bedrest or open reduction and internal fixation. Open reduction was selected as it offered the greatest chance of stable fixation and rapid functional return. At surgery an effective loss of almost four centimeters of cortical bone was found. Tumor was removed with curettes, and the fracture was stabilized with a combination Zickel intramedullary rod and hip pin. Polymethylmethacrylate cement was introduced into the medullary and cortical defect to reinforce the stabilization and restore the length of the femoral shaft (fig. 1-B).

Post-operatively the patient was treated with radiation therapy (2500 rads) and within two weeks was able to transfer from bed to chair and ambulate comfortably in the parallel bars. Four weeks following surgery the patient developed bilateral pleural effusions poorly controlled with repeated aspirations and died of respiratory failure in the fifth post-operative week.

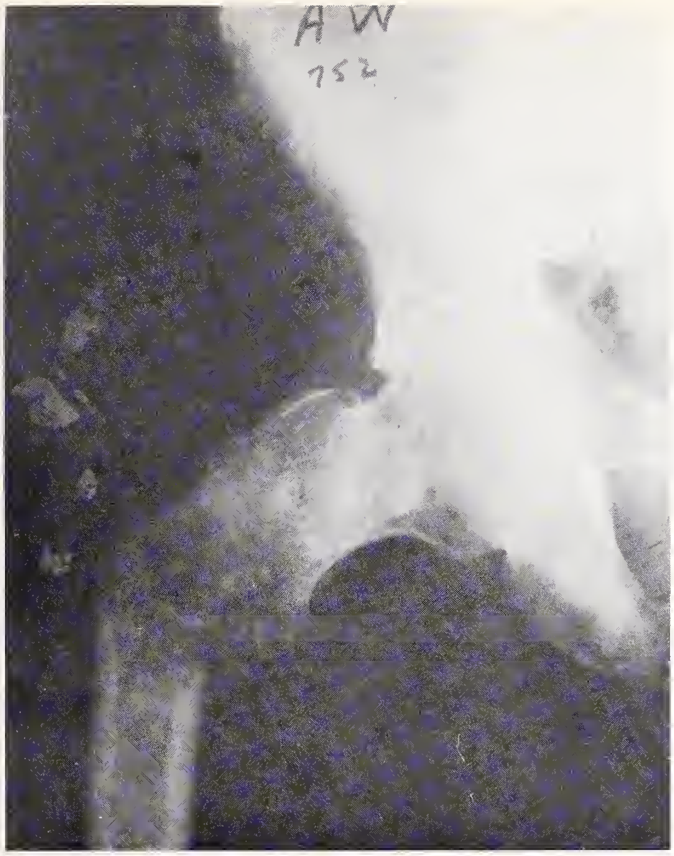

Figure 1-A

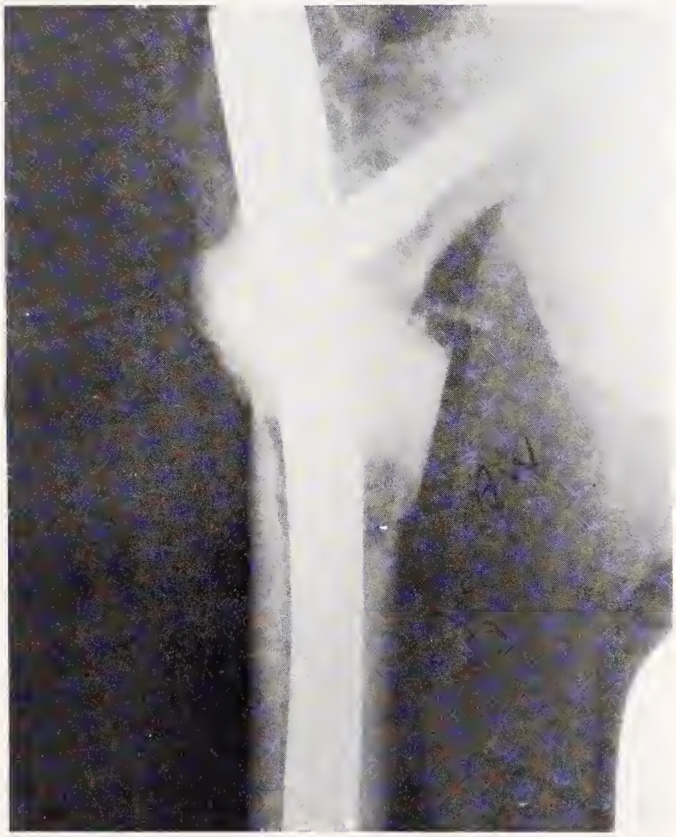

Figure 1-B

Figure 1

Case Number One: A subtrochanteric femoral fracture through a lesion metastatic from the prostate. 1-A, the pre-operative appearance and 1-B, following internal fixation with a Zickel intramedullary rod and hip pin reinforced with polymethylmethacrylate.

Case Number Two (2) is a 59 year old male admitted to the West Haven Veterans Hospital with a pathological fracture of the left femoral shaft, metastatic from the lung. Fifteen years prior to this fracture a diagnosis of epidermoid carcinoma of the left upper lobe of the lung was made and treated with left pneumonectomy. The patient remained free of his disease until six months prior to admission when a second primary of the right mainstem bronchus was identified and treated with radiation therapy. Six months later while arising from a chair he felt a severe "snap" in the left thigh and was unable to bear weight on this extremity. Radiographs (fig. 2-A) revealed a pathological fracture of the left femoral shaft with extensive spotty destruction of cortical bone surrounding the fracture site. Surgical stabilization was selected, as the alternative regimen of prolonged bedrest and traction seemed an unreasonable investment of time in view of the patient's limited life expectancy.

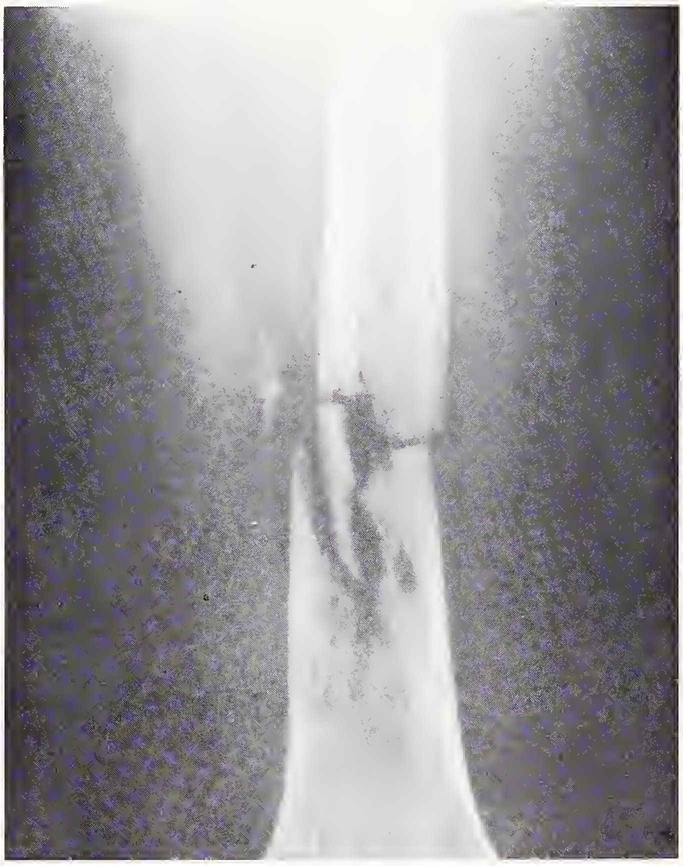

Figure 2-A

At surgery, a 10 by 10 centimeter mass of tumor and necrotic tissue was found surrounding the fracture site, and the cortical bone beneath was extensively destroyed. It was estimated that 85 per cent of the cortical bone was missing over a 10 centimeter segment and only 15 per cent of the circumference of the shaft remained intact on the posterolateral surface. This represented a serious loss in the integrity of a major weight bearing bone and it was recognized that no rod or plate alone could provide satisfactory support. A large Kuntscher rod was inserted into the medullary cavity of the femur to support the ends of the bone; and, in order to prevent longitudinal collapse, a large volume of polymethylmethacrylate cement incorporating circumferential clamps was used to reconstruct the missing cortex and reinforce this structural defect (fig. 2-B).

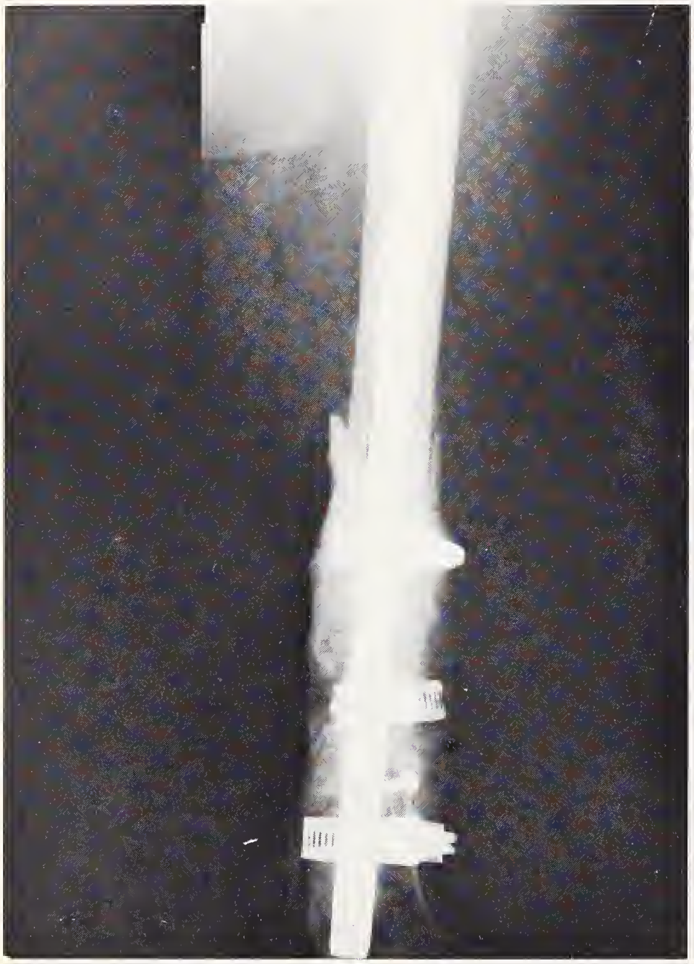

Figure 2-B

Figure 2

Case Number Two: A pathological fracture of the femoral shaft secondary to metastatic epidermoid carcinoma from the lung. 2-A demonstrates the extensive pre-operative involvement and 2-B, following internal fixation with a Kuntscher rod reinforced with polymethylmethacrylate and circumferential clamps.

Post-operatively the patient was treated with radiation therapy and by the third post-operative week he was ambulating comfortably with crutches and was capable of partial weight bearing on the involved extremity. He was subsequently discharged from the hospital but returned two months later with extension of his disease and died three-and-a-half months post-operatively of pulmonary insufficiency.

Case Number Three (3) illustrates the effectiveness of prophylactic surgical stabilization when the integrity of a weight bearing bone is jeopardized by lytic tumor metastases producing pain but fracture has not yet occurred.

This 48 year old female with adenocarcinoma of the breast and extensive bony metastases was admitted to the Yale-New Haven Hospital with a large and painful lytic cortical defect in the left proximal femoral shaft. Nine years previously the patient had a left radical mastectomy at which time all lymph nodes were negative. Three years later a recurrence in the left chest wall and metastases to the thoracic spine were noted, and she was treated with oophorectomy. Three years thereafter she developed multiple bone metastases treated with radiation therapy, systemic androgens, and a variety of chemotherapeutic agents with intermittent success. The apparent responsiveness of this tumor to hormonal therapy prompted treatment with trans-sphenoidal hypophysectomy when symptomatic bone metastases recurred. A particularly painful lytic area involving over one-half of the cortical surface of the left hip in the subtrochanteric region developed without evidence of fracture (fig. 3-A), as well as extensive asymptomatic metastases throughout the lumbosacral spine, pelvis, and right femoral neck (fig. 3-B). Because of the severe pain localized to the left proximal femur it was concluded that fracture was imminent and the left hip was prophylactically pinned

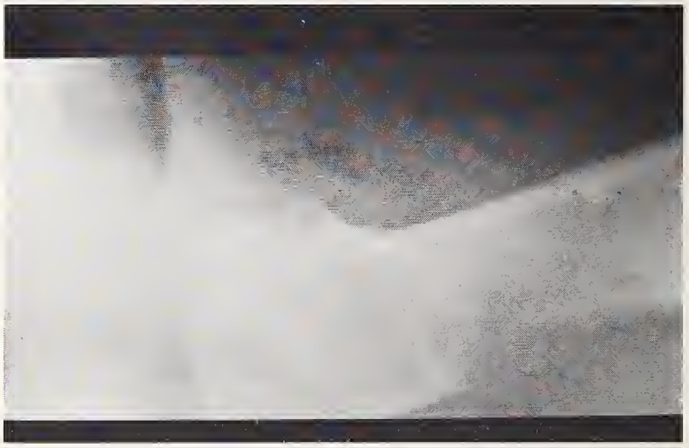

Figure 3-A

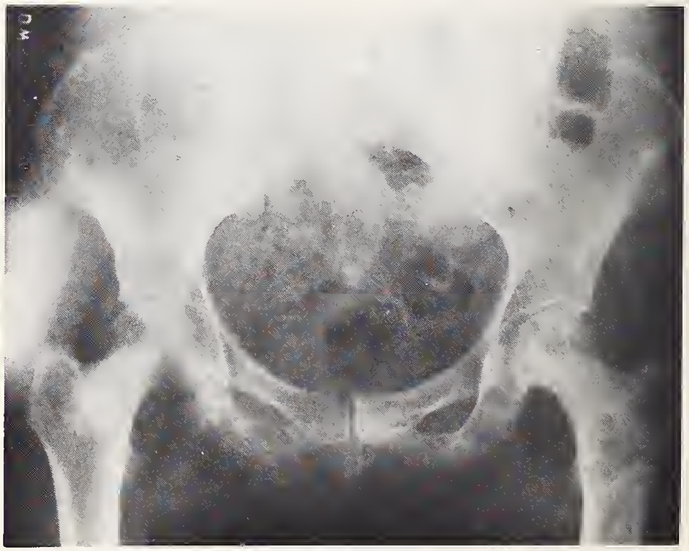

Figure 3-B

with a compression screw and plate. The extensive intramedullary tumor of the proximal femoral shaft was curetted through a window in the cortex and replaced by polymethylmethacrylate cement (fig. 3-C).

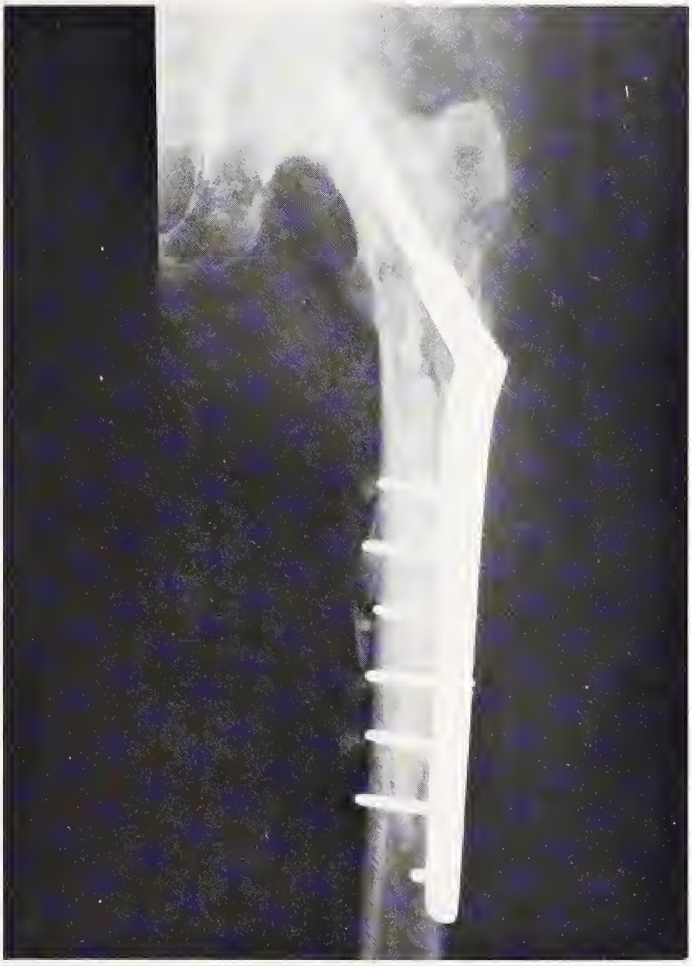

Figure 3-C

Figure 3
Case Number Three: An impending fracture of the femur in a skeleton extensively riddled by adenocarcinoma originating in the breast. 3-A reveals a large, painful, lytic defect in the subtrochanteric region of the left femur; 3-B, widespread asymptomatic metastases to pelvis, lumbo-sacral spine and both femori; and 3-C, following internal fixation of the impending fracture of the left femur with a sliding, compression hip screw and plate and polymethylmethacrylate.

Post-operatively the patient received 3000 rads to the left hip and proximal femur. Her wound healed well and she was discharged to home on protective weight bearing with no residual hip pain. She remains well and active despite her disease although her prognosis is poor.

Case Number Four (4) illustrates the effectiveness of repeated surgical procedures in treating a low grade malignancy metastatic to a life threatening portion of the skeleton. When prolonged survival is anticipated there may be an advantage to the use of bone grafts for stabilization, as these will be biologically incorporated into the skeleton and may remodel with time. This patient was treated prior to the acceptance of polymethylmethacrylate reinforcement in pathological fractures.

The patient was 53 years of age when he was first treated at the Yale-New Haven Hospital in 1965 for salivary gland tumor metastatic to the upper cervical spine. Twenty-two years before, in 1943, a low grade malignant salivary gland tumor was excised followed by a right radical neck dissection. Four years later, left cervical adenopathy developed and was treated with a left radical neck dissection.

The patient did well for the next 14 years when in 1961 local tumor recurrence in the right ear canal was noted and excised, followed by irradiation with 5000 rads. In 1965 the patient developed neck pain. Radiographs revealed involvement of the first two cervical vertebrae with tumor, and he was treated with laminectomy of the second and third cervical vetebrae followed by an additional 2500 rads. In 1966, followup roentgenograms revealed involvement of the second cervical vertebral body, and this was biopsied through the trans-oral approach. Despite treatment with an additional 2000 rads, progressive destruction developed at that level (fig. 4-A). Because the integrity of the spine was jeopardized and paraplegia appeared imminent, the spine was stabilized by posterior fusion extending from the occiput through C-5 using iliac graft wired into place (fig. 4-B). Over the course of the next year, progressive destruction and collapse of the anterior elements of C-1, C-2, and C-3 was noted (fig. 4-C); and in June, 1967, the bodies of C-2 and C-3 were excised, replaced, and fused using a large piece of iliac

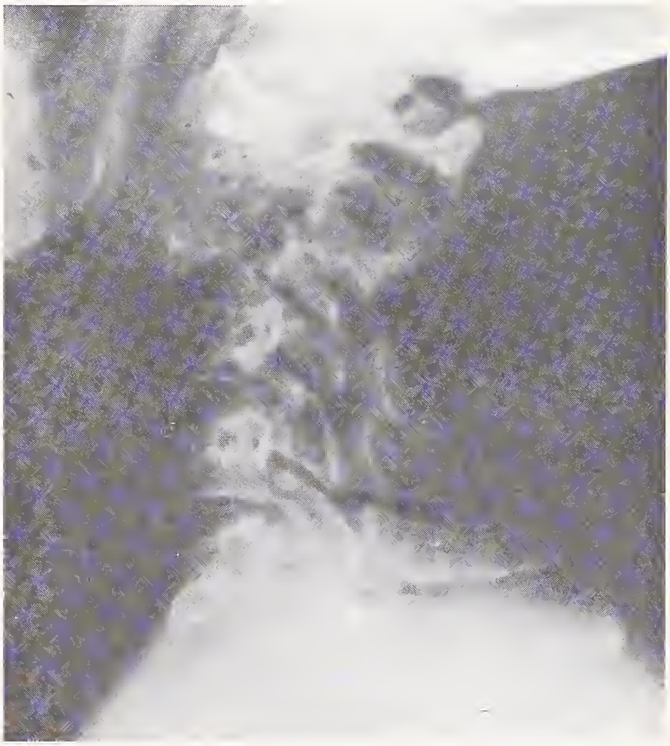

Figure 4-A

bone extending from the ring of C-1 to the body of C-5 anteriorly (fig. 4-D).

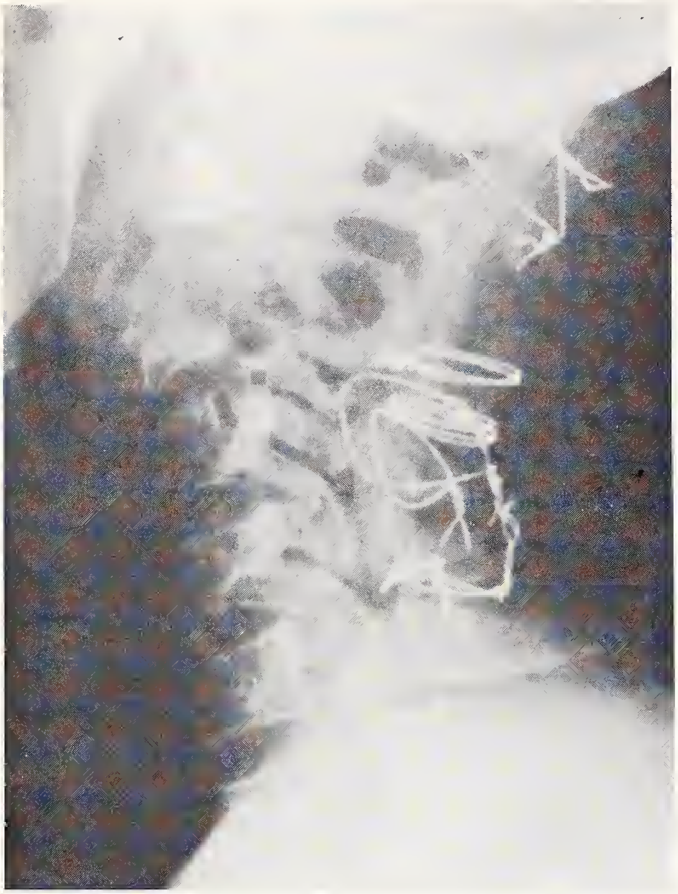

Figure 4-B

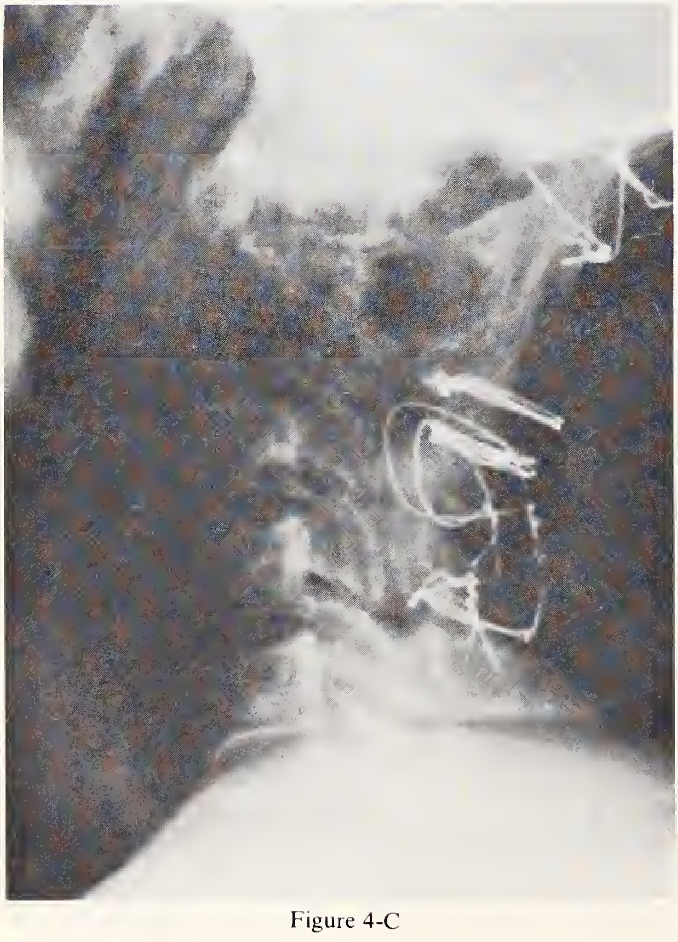

Figure 4-C

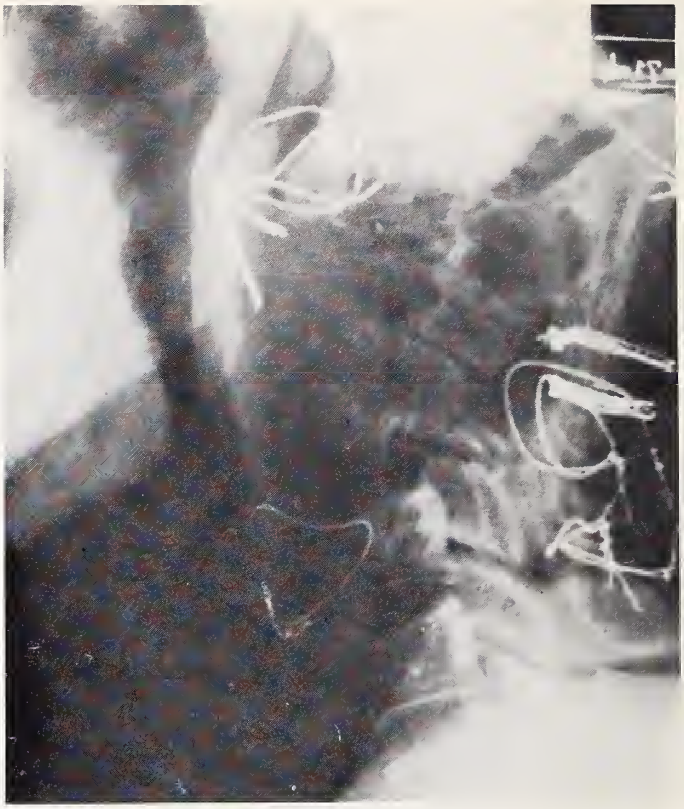

Figure 4-D

The tumor recurred locally destroying the remaining portions of the involved vertebrae. In February, 1968, while riding in a car, but not associated with significant trauma, the patient felt a sudden snap in his neck. Roentgenograms revealed a fracture of the posterior graft (fig. 4-E). Because of the progressive dissolution of the anterior graft and the remaining vertebral elements, this was stabilized using struts of fibula posteriorly, extending from the occiput to C-7 (fig. 4-F). The patient had no neurologic deficit, but over the course of the next several months exhibited a progressive downhill course and died of tumor extension and respiratory failure, more than three years after his first bone graft.

Discussion

Fractures of the femur are hard to control because this bone is surrounded by large masses of muscle making alignment by external manual manipulation difficult. Furthermore, the femur must bear almost full body weight during ambulation. For these reasons, when femoral shaft fractures are treated nonoperatively, four to six weeks of initial traction is used (until there is evidence of early union) followed by immobilization in a body spica cast for a total of four to eight months. This represents a major investment in time followed by muscle atrophy and joint stiffness. In the face of a limited life expectancy this investment may seem unjustified.

Operative stabilization of a pathological fracture can offer a patient effective palliation. This includes

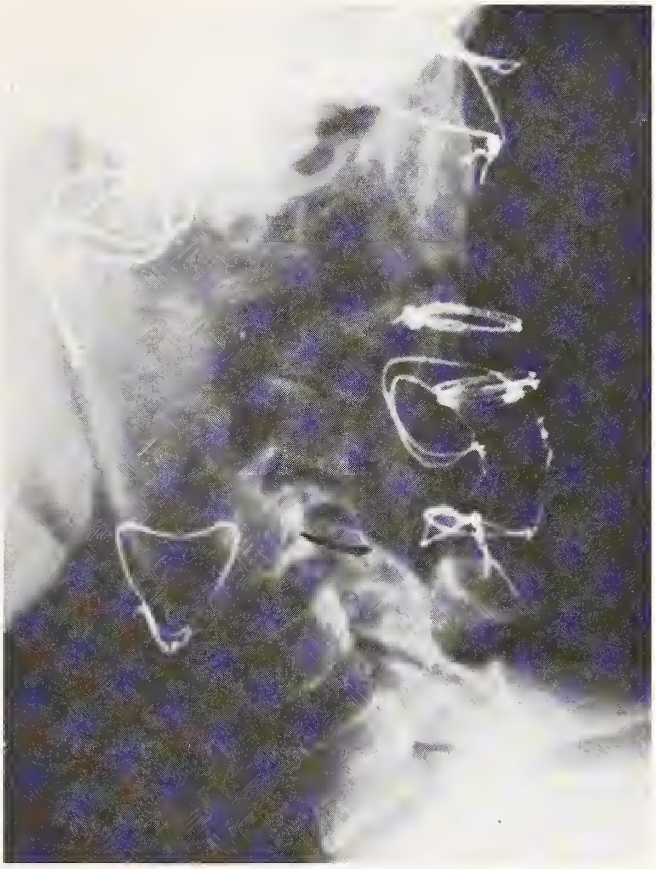

Figure 4-E

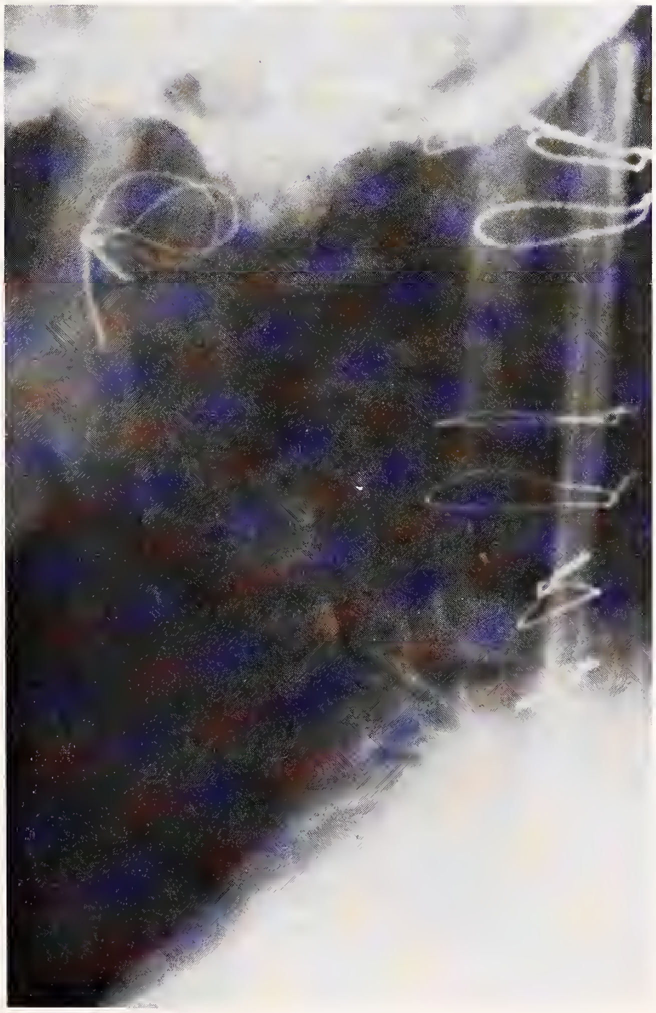

Figure 4-F

Figure 4

Case Number Four: Progressive destruction of the upper cervical spine by a metastatic salivary gland tumor. 4-A, appearance following biopsy of the body of C-2, laminectomy of C-2 and C-3, and 2500 rads in February 1966; 4-B, an occiput through C-5 fusion was performed with autogenous iliac graft; 4-C, progressive destruction of the bodies of C-1, C-2, and C-3 almost one year following the original graft; 4-D, an autogenous iliac graft was used to replace the anterior elements of C-1 through C-5; 4-E, demonstrates a fracture through the upper portion of the posterior graft occurring while riding in a car in February, 1968; and 4-F, a fibular graft was used from C-1 through C-7 to reinforce posterior fusion.

increased function, mobility, comfort, simplified nursing care, decreased time in the hospital and the ability to be more self-sufficient. [2,6,10,12-16,19,24,25] It avoids the morbidity of prolonged bedrest in a debilitated patient, and can make radiation therapy easier by the absence of bulky external splints.[12, 13] Many patients can avoid being bedridden.[2, 6, 20] Occasional alternatives to internal fixation in properly selected patients may also include resection of the involved bone (such as the proximal femur or humerus)[5, 26] and rarely amputation[26, 27] or neurosurgery for control of pain.[23] Cryosurgery is still being evaluated by a small group of physicians skilled in its use and is not yet a serious alternative for general use.[28]

Stabilization may be achieved surgically with screws and plates or intramedullary rods. The intramedullary rod permits dispersion of forces along a large surface whereas plate fixation depends upon the integrity of the screws within the bone, which may be compromised by neoplastic disease. Polymethylmethacrylate cement has added a new dimension to stabilization of pathological fractures. Structural defects in bone may be filled, bone length may be restored, and bone weakened by neoplastic disease reinforced.

Surgery carries with it the risks of infection and cardio-respiratory complications. These risks, however, are small when compared with the morbidity of prolonged bedrest in a debilitated patient. One may argue that a survival of at least three to six months be anticipated to justify the risks of surgery. In fact, prospective estimates of life expectancy may be inaccurate as illustrated in Case Number One (1), but even a short period of comfortable function and the optimism afforded by surgery may warrant this aggressive approach.

Formerly, traction, external splints, and heavy sedation were the mainstays of treatment for pathologic fractures of weight-bearing bones. This was often combined with a hopeless attitude toward the patient's terminal state. Today, however, with proper selection of patients and appropriate surgical techniques the quality of physical survival and the mental attitude of the patient and their families may be significantly improved.

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Post-Abortal Tetanus

Cyril Newman, M.D., Carol Jacobs, M.B., B.S. and
Brenda Roberts, M.B., Ch.B., D.A.

Abstract—A case of tetanus following an illegal abortion is presented. The patient required anti-tetanus serum, high doses of diazepam, promazine for sedation, antibiotics, curettage, tracheostomy, curarization, assisted ventilation and maintenance of nutrition through parental fluids. Her course was further complicated by bilateral pneumothorax, tachycardia, and hypotension.

Introduction

A 19-year-old Negro female gravida 2 para 1 was admitted to Queen Elizabeth Hospital in Barbados, West Indies, with difficulty speaking or opening mouth, and spasms of the skeletal muscles. These events occurred on the same day as admission. The patient related that a friend injected something into her uterus through the vagina to bring about an abortion. This occurred one week prior to admission. Bleeding was noticed soon after the illegal procedure and persisted to admission.

Review of systems, past medical and immunization history were non-contributory. Physical examination revealed a thin, alert and apprehensive female exhibiting trismus, risus sardonicus, dysphagia, and generalized increasing muscular spasms. A temperature of 99°F, pulse 84 per minute, respirations 20 per minute, and blood pressure of 120/70 were recorded on admission. Further findings of significance showed the abdomen to be generally tender, but most marked over the suprapubic area. There was no loss of liver dullness. Pelvic examination showed the cervix open to 1 cm with tissue in the external os, malodorous bloody discharge, and uterus 8-10 weeks size.

Course and Treatment

Admission laboratory data: Hb 12.9 grams, W.B.C. 8,100, BUN 21 mg%, Na 142 mEq/L, K 4.2 mEq/L, Cl 102 mEq/L, glucose 137 mg%, and HCO_3 21 mEq/L. Cultures were obtained but were later negative for clostridia. Treatment was started with 50,000 units of tetanus (bovine) antitoxin intravenously and 50,000 units intramuscular after sensitivity testing. Penicillin (2 million units every 6 hours intravenously), streptomycin (0.5 grams every 12 hours intramuscularly), and chloromycetin (1 gram every 6 hours intramuscularly) were given. Intravenous diazepam was started at the same time to control spasms. It was necessary to perform curettage, tracheostomy, and passage of a nasogastric tube under general anesthesia soon after admission. Nitrous oxide, oxygen and sodium thiopental were used.

The patient continued to have spasms and promazine was added to the therapy. Chest X-ray showed a moderately large pneumothorax on the right and a smaller one on the left. Intercostal tubes were inserted to fully expand both lungs. The patient's ventilation remained adequate, and blood gases were normal. Over the next 48 hours, the patient's condition continued to deteriorate with numerous spasms occurring. Curarization was initiated, and ventilation maintained with a mechanical respirator. The patient experienced a marked tachycardia requiring digitalization. On the 6th day of hospitalization the blood pressure was unrecordable, and the patient lapsed into coma. A levophed drip was started, and one hour later the systolic blood pressure could be obtained. The patient could respond to simple commands.

By the 10th day of hospitalization, the intercostal tubes were removed, and muscular spasms were minimal. Curarization was discontinued, and the patient weaned from the ventilator. The antibiotic coverage at this time was penicillin, streptomycin, and gentamicin. The patient developed atelectasis of the right upper lobe requiring bronchoscopy. Intravenous fluids were discontinued on the 29th day of hospitalization, and oral feedings were started.

All medications were discontinued by the 34th day, and patient transferred to the general ward 3 days afterward. The patient was discharged to home on the 40th day of hospitalization to be seen in medical and gynecology clinic for follow-up examination and completion of tetanus immunization.

Comment

Review of the world literature by Weinstein and Beacham[1] showed a mortality rate between 57-85% in post-abortal tetanus. Adams and Morton[2] related a 75-100% mortality rate in their series. Several reports in the English literature[3-5] indicate successful outcome in tetanus occurring in association with pregnancy or

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the puerperium. In this case presented, a successful outcome occurred in spite of bilateral pneumothorax, hypotension and atelectasis. Those factors which are considered important in the management of the pregnant patient with associated tetanus infection or the post-abortal tetanus patient are:

1. Recognition of the classical signs of trismus, risus sardonicus, dysphagia and increased muscular tone and spasms.
2. The use of tetanus toxoid and tetanus immune globulin (human) or anti-tetanus serum after sensitivity testing.
3. The necessity for antibiotic coverage for clostridia and other anaerobic organisms.
4. Tracheostomy early, followed by sedation, muscle relaxants and if spasms cannot be controlled with high doses of diazepam, then curarization and assisted ventilation will be required.
5. Thorough and continuous medical and nursing care in a quiet room shielded from noise and external stimuli.
6. Adequate hydration and nutrition.
7. Treatment of the site of injury, and in cases of retained infected tissue a curettage should be considered. This has been condemned by previous writers.[1,2]
8. Hysterectomy as the initial form of therapy in tetanus is not recommended by previous writers. This case neither supports nor alters this recommendation.
9. Post treatment immunization must be performed.

The conclusions expressed in this article do not reflect the official views of the U.S. Navy or of the Bureau of Medicine and Surgery.

This paper was presented at the 13th Armed Forces District Meeting of the American College of Obstetricians and Gynecologists, November 3-8, 1974, at Washington, D.C.

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Delayed Hepatotoxicity from Methyldopa

Lee Sataline, M.D., and David Lowell, M.D.

Abstract—Hepatotoxicity developed in a patient three years after starting therapy. The onset clinically resembled acute hepatitis, but subsequently, as the methyldopa was continued, the clinical spectrum was that of cholestatic jaundice. It is apparent that liver damage may occur a considerable time after initiating treatment with methyldopa.

Liver damage resulting from methyldopa (Aldomet) has been recognized for more than a decade[1,2] and a variety of clinical and chemical histological abnormalities have since been reported.[3,4] In most instances, the hepatotoxicity developed within three months from the initiation of therapy.

We recently were confronted with a patient who developed hepatic dysfunction after having taken methyldopa for almost three years. Initially his clinical symptoms resembled "acute hepatitis" with fever and prostration; and later, while continuing to take methyldopa, the clinical picture was that of cholestasis with intense pruritus.

Case Report

In 1965, the patient, age 32, was found to have hypertension. Diagnostic studies at a university hospital demonstrated no abnormalities and he was treated with reserpine and thiazides but according to the patient control of his hypertension was never good. He subsequently moved to this area, and for three years took no medications, nor saw a physician.

In January, 1972, following an attack of "the flu" he was hospitalized with congestive heart failure, atrial tachycardia and a blood pressure of 260/140 mm Hg. Pertinent physical findings at that time included grade 2/4 retinal changes, distended neck veins, pulmonary congestion with cardiomegaly, a summation gallop and a rapid ventricular rate. The liver edge was felt 10 cm. below the costal margin. No spleen was palpated. The extremities were cyanotic but without edema. The chest X-ray demonstrated cardiomegaly with pulmonary congestion. The ECG revealed atrial tachycardia with a rate of approximately 200, and evidence of left ventricular hypertrophy.

Initial laboratory studies (see Table I) included a normal CBC, CPK and electrolytes. The urine contained 4+ albumin. The BUN was 37 mg./dl., the creatinine 2.7 mg./dl., the uric acid 9.2 mg./dl. The bilirubin was normal but the SGOT and alkaline phosphatase were all elevated to about twice their normal values. Urine VMA measurements and thyroid studies were normal.

The patient was treated with digoxin, furosemide and reserpine and although his blood pressure fell to approximately 180/100, the pulmonary congestion and tachycardia persisted. On the third hospital day he was placed on quinidine 200 mg. every four hours and the following day he converted to a normal sinus rhythm, and his congestion subsided. Additional studies including an IVP and renal arteriography were normal. The patient was discharged on low salt diet, methyldopa (250 mg.) four times daily, hydralazine (Apresoline) (25 mg.) four times daily and chlorthiazide (0.5 gm.) twice daily, in addition to his digoxin and quinidine. At time of discharge in February, 1972, all laboratory studies had returned to normal except for a slightly increased BUN and creatinine.

He was followed closely for the next 34 months: The dosage of his medications varied little except for the discontinuance of quinidine and the addition of allopurinol (Zyloprim) in July, 1972. Periodic laboratory studies were obtained and the relevant data are listed in Table I. The total serum bilirubin, the SGOT, LDH and alkaline phosphatase were normal. The liver edge which had been felt 4 cm. below the costal margin since February 1972 had not changed and the total liver span remained about 12 cm. in the MCL. The patient was asymptomatic and was working a full day.

On November 21, 1974 he presented with chills, a fever of 101° - 102°F., severe malaise and anorexia of 2 days duration. He denied pruritus and changes in the color of his urine or stool. He had had no contact with jaundiced subjects or toxic materials and did not consume alcoholic beverages. He was hospitalized.

Pertinent physical findings included scleral icterus, grade 2/4 retinopathy, clear lung fields, cardiomegaly with a prominent S3 and a regular rate of 100/min. The liver edge was palpated 8 cm. and the spleen 5 cm. below their respective costal margins. The stool was brown and guaiac-negative, his blood pressure 140/80 mm.Hg. Laboratory data revealed a hemoglobin of 13 gm./dl., a WBC of 7,300 with 82% neutrophils, 2% bands and 16% lymphocytes. The reticulocyte count was 1%, and the platelet count was 150,000: the direct Coombs test was negative. The urine was amber-colored and clear with a specific gravity of 1.013. It gave a trace reaction for protein and a positive reaction for bile. The direct bilirubin was 2 mg./dl., the indirect 4.8 mg./dl. The prothrombin time, LDH, cholesterol and alkaline phosphatase were normal. The SGOT was 180 units (N < 40). Tests for Australian antigen, smooth muscle and antimitochondrial antibodies, and antinuclear factor were subsequently reported as negative. The BUN was 44 mg./dl.

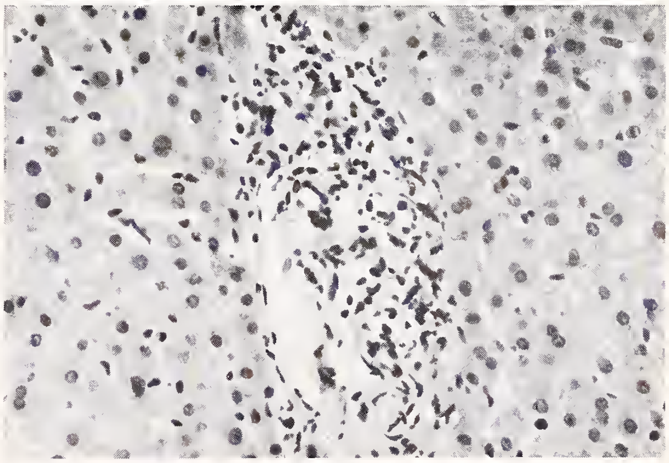

Figure 1

Photomicrograph of liver biopsy showing slight enlargement and edema of portal triad and infiltration by chronic inflammatory cells. (Hematoxylin and eosin x440)

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TABLE I

	1/28/72	2/6/72	7/20/72	5/15/73	5/6/74	11/21/74	12/9/74	1/6/75	3/20/75
Total Bilirubin (N= < 1.2 mg./dl.)	1.5	0.9	1.0	1.0	1.0	6.8	6.6	1.2	0.8
Alk. Phosphatase (N= < 85IU/L)	152	74	70	68	80	140	188	70	70
SGOT (N= < 50 IU/L)	98	48	17	20	35	180	180	55	43
LDH (N= < 200 IU/L)	120	106	102	102	140	139	224	195	133
Cholesterol (mg./dl.)	160	164	176	168	175	180	233	160	166
BUN (mg./dl.)	37	31	33	29	42	44	39	36	48
Uric Acid (mg./dl.)	9.2		13.4	12.4	9.6	8	10	7.2	6.9
Creatinine (mg./dl.)	2.7	2.4	2.8	2.8		2.8		2.6	2.8

The patient was maintained on his usual cardiac and antihypertensive medications, methyldopa, hydralazine, chlorthiazide, digoxin and allopurinol, and his fever subsided on the second hospital day. A repeat total bilirubin was 5 mg./dl. with a 2 mg./dl. direct. A liver biopsy was performed on the fourth hospital day. Histological examination showed minimal intrahepatic cholestasis. The portal triads were slightly enlarged and edematous, and contained a chronic inflammatory cell infiltrate. No eosinophils were seen (Figure 1).

The patient was discharged after 4 days to convalesce at home. However, the jaundice persisted and one week after discharge he began to note intense pruritus. On December 9, 1974 the total bilirubin was 6.6 mg./dl. and the alkaline phosphatase, cholesterol and SGOT were all elevated. At this time it was elected to discontinue the methyldopa, maintaining the patient's blood pressure on guanethidine Ismelin, hydralazine and chlorthiazide. During the next three weeks the jaundice and pruritus subsided, and repeat bilirubin, SGOT and alkaline phosphatase studies obtained on January 2, 1975 were normal. An oral cholecystogram performed on January 17 demonstrated no calculi. On March 20, physical examination demonstrated no splenomegaly and the liver span was once again approximately 12 cm. Liver chemistries were normal.

Discussion

The clinical and histological spectra of methyldopa induced liver disease may be indistinguishable from those of viral hepatitis.[3,4] Rechallenging patients with methyldopa to reproduce liver dysfunction has previously been reported [3,5,6] but we could not justify this procedure in view of the inherent risk of inducing chronic or fatal hepatic reactions.[6,7,8] It is unlikely that the other medications concurrently taken by our patient were responsible as they are infrequent causes of jaundice, and were continued even as his liver function returned to normal. The normal oral cholecystogram mitigates a diagnosis of chronic biliary tract disease.

Dr. Laurella McClelland at Merck, Sharp and Dohme, manufacturers of Aldomet, has informed us that they are aware of five cases where hepatic dysfunction occurred 1, 2, 3 and 6 years after instituting methyldopa therapy. One patient on methyldopa for 2 years had known cholecystitis with cholelithiasis, while another taking methyldopa for 3 years had a slowly resolving pneumonitis with transient jaundice. The patient on methyldopa for 6 years developed a clinical picture of cholestatic jaundice. Such a clinical presentation appears to be uncommon and has been reported only thrice before.[4,9] The intense pruritus and elevated alkaline phosphatase levels which developed in our patient are compatible with a cholestatic syndrome.

We believe that methyldopa induced liver disease must be considered in any case of jaundice regardless of the duration of treatment with the drug. Failure to do so could prolong or even prevent recovery with potentially fatal consequences.

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Sickle Cell Hematuria

Controlled by
Epsilon Aminocaproic Acid

Morton D. Grant, M.D., and Herbert I. Horowitz, M.D.

Abstract—Sickle cell hematuria occurs within a setting of primary fibrinolysis. Epsilon aminocaproic acid provides a rational treatment when this hematuria is severe and fails to subside spontaneously.

Introduction

Goodwin, Alston and Semans[1] in 1950 ascribed painless, sporadic hematuria in seven Negro patients to sickle cell trait after urological and coagulation investigations failed to demonstrate any obvious abnormalities. This condition was found to be much more common with sickle cell trait than in the homozygous state, to appear most often in young adult males[2] and usually, to subside spontaneously with bed rest.[3] Hematuria in sickle cell trait may become persistent and refractory to conservative management. Immergut and Stevenson[4] used epsilon aminocaproic acid (EACA) to arrest such bleeding and Vega et al[5] obtained similar results. This report emphasizes the rationale for its use in sickle cell hematuria and cites three additional patients who were benefitted:

Case 1

A 27-year-old Negress with SA hemoglobin was admitted to the Bronx-Lebanon Hospital Center in February, 1967 because of recurrent painless hematuria over the past three years with iron deficiency anemia. The most recent episode had lasted for three months. Urological evaluation demonstrated no cause for the bleeding. Coagulation studies were normal. She was given 1 gram of EACA every hour by mouth and hematuria stopped within two days. She was discharged on 1 gram every two hours. Hematuria recurred eleven days after the medication was discontinued. EACA was reinstated with good results and continued for three weeks in progressively reduced dosage. Her anemia responded to oral iron therapy. She remained free of symptoms until October, 1969 when a brief episode of painless hematuria recurred, but ceased spontaneously after two days of bedrest.

Case II

A 36 year-old Negress entered the Bronx-Lebanon Hospital Center in February, 1969 with a chief complaint of hematuria of two days duration accompanied by left flank pain. She recalled brief episodes of hematuria at the birth of her two children which subsided without treatment. Physical examination was essentially normal. Urological investigation revealed slight caliectasis on the right. There was no evidence of a coagulopathy. Hemoglobin electrophoresis showed SA hemaglobin. A diagnosis of hematuria secondary to sickle cell trait was made. The patient's hospital course was characterized by continued hematuria with a fall in hematocrit from 38 to 31.5%. Oral EACA, 1 gram every hour, was begun with cessation of hematuria in four days. Medication was continued for two weeks thereafter, in progressively reduced dosage with no further episodes of hematuria. Her hematocrit rose to normal limits.

Case III

A 28-year-old Negress with sickle cell trait developed painless hematuria in November, 1968 and was admitted to the New York Hospital—Cornell Medical Center. Coagulation and urologic evaluation showed no evident abnormalities and a five day course of oral EACA, 1 gram every 6 hours, was without effect. In December, 1970 she was found to be severely anemic because of persistent hematuria and required blood transfusions. Oral EACA was reinstituted, but again failed to arrest bleeding. An intravenous urogram now showed right ureteropelvic junction obstruction. At surgery, a right renal artery and vein were found crossing at this site and considered responsible for the obstruction. A dismembered Foley Y-V pyeloplasty was performed but, post operatively, the hematuria continued. She was given intravenous EACA, 5 grams initially, and 20 grams continuously according to the regimen of Vega et al[5] and 24 hours after initiating treatment, her urine was grossly clear. Thereafter, the patient received oral EACA and was maintained on a daily dosage of 6 grams for three months. To date, there has been no recurrence of the hematuria.

Discussion

Renal papillary necrosis is the anatomic basis for sickle hematuria. This lesion is caused by stasis and thrombosis subsequent to sickling of susceptible erythrocytes within the medullary circulation. Anoxia, hypertonicity and acidity, conditions known to induce sickling, are factors present normally in medullary tissue.[6] Sickle hematuria is due to disruption of clot formation by fibrinolysis at the site of papillary necrosis. Lysis is initiated by urokinase, an activator substance present in the urine that is continually bathing this area of necrosis. EACA, which is excreted in the urine, blocks fibrinolysis by inhibiting the activation of plasminogen[7] and to a lesser extent by inhibiting plasmin.[8] It has been found to be valuable in other areas of hematuria; in that of hemophilia,[9] following prostatectomy,[10] or for the hematuria associated with cysts and neoplasms of the kidney.[11]

In the absence of other disease, hematuria may be ascribed to sickle trait or homozygous state. Such

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bleeding is usually sporadic in nature and spontaneous remission may occur, however in the patients reported, hematuria was severe, caused anemia and did not subside on simple bedrest, so that EACA seemed indicated. In cases I and II, oral therapy with EACA led to the arrest of bleeding, but in Case III this occurred only after EACA was initially given intravenously.

There are circumstances where hematuria is massive[12] and unresponsive to EACA. Dees[13] was able to arrest such bleeding by blocking the ureter with a bulb-ended ureteric catheter while using hyperbaric oxygen to prevent further hypoxic sickling.

Therapy with EACA requires careful surveillance for obstructive nephropathy which is a potentially dangerous complication that may arise from nonlysis of clots.[14] We recommend limiting its use to instances of sickle hematuria where bleeding is persistent, unresponsive to simple bedrest and causing severe anemia.

Acknowledgement

We are indebted to Dr. Anne Moore, Department of Hematology, New York Hospital—Cornell Medical Center, for permission to publish details of her patient (Case III).

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Routine breast x-rays

Women should avoid having routine x-ray examinations for breast cancer if they are under 35 and are asymptomatic—that is, without complaint, without history, without physical findings, and without a strong family history of breast cancer.

This is the recommendation of the American College of Radiology, and it was recently endorsed by **Health, Education, and Welfare Department's Bureau of Radiological Health** (BRH).

Two main factors influenced the recommendation: (1) there is a low incidence of breast cancer in the under-thirty-five age group; and (2) breast x-rays (mammographs) are less effective in detecting early signs of cancer when women are under thirty-five. Reason is that younger women's breast tissue—being firmer and more fibrous—may hide early signs of tumors.

The American College of Radiology did not take a stand on routine use of mammography for women over thirty-five. Instead, it said that further research is needed to determine whether mammography is effective in asymptomatic women between thirty-five and fifty.

BRH points out that the recommendation for the under-thirty-five group is significant because breast cancer screening centers are being set up for young women on college campuses. Since it is known that extremely high levels of radiation can cause breast cancer, there is concern among radiologists over the slight possibility that even the low-level exposure of mammographs might cause cancer if repeated for many years.—Consumer Register, June 15, 1975, Vol. 5, p. 3.

Advances in Clinical Cardiology

Lawrence S. Cohen, M.D.

A Symposium, Advances in Clinical Cardiology-1975, was held on September 20, 1975. This Symposium was sponsored by the Heart Association of Greater New Haven and the Greater Bridgeport Heart Association. It was attended by over 200 physicians and nurses.

The initial talk of the morning was an "Overview of Advances in Clinical Cardiology" by Doctor Lawrence S. Cohen, Professor of Medicine and Chief of Cardiology, Yale University School of Medicine. Doctor Cohen reviewed some of the parallel lines of growth in cardiology, cardiovascular radiology and cardiovascular surgery. He spoke about the first cardiac operation performed in 1873 for the removal of a pin from the wall of the right ventricle. He then recounted the first intracardiac operation, a mitral valvulotomy performed by Doctor Elliott C. Cutler at the Peter Bent Brigham Hospital in 1923. The patient survived but the next six who were operated upon for this lesion died and this operation was abandoned for the next twenty years. Doctor Werner Forssman performed the first cardiac catheterization in 1929. The subject was himself. This opened up the era of cardiovascular radiologic investigation. The late 1930's and early 1940's saw the rebirth of cardiac surgery. Doctor Robert Gross closed a patent ductus arteriosus in 1939. Since then the parallel growth of catheterization and surgery have led to the availability of prosthetic valves and bypass grafts in appropriate patients today. These advances mark the present state of the clinical art.

The future of cardiology obviously rests in the prevention of arteriosclerotic heart disease. Although cardiac transplantation is possible in a small number of patients the development of an artificial heart will probably be the route for the majority of patients who will need this type of intervention.

The next speaker was Doctor J. O'Neill Humphries, Acting Director of Cardiology, The John's Hopkins University School of Medicine, Baltimore, Maryland. His topic was "Lessons Learned in the Coronary Care Unit by Hemodynamic Monitoring." Doctor Humphries indicated that many of the lessons are not new. Physicians have been measuring cuff blood pressure and other vital signs for many years. The more modern counterparts of these are 1) the routine measurement of central venous pressure, right atrial and right ventricular end diastolic pressure by central venous catheter; 2) arterial cannulation with hemodynamic monitoring of brachial artery blood pressure; 3) measurement of the pulmonary capillary wedge pressure, reflection of left ventricular end diastolic pressure. It is through the Swan-Ganz catheter that these innovations have been developed. Lastly, cardiac output is now more easily measured by the use of either Indocyanine green or a thermistor catheter. The new lessons learned are 1) nurses and technicians can handle the monitoring equipment quite adequately; 2) the blood pressure cuff does not reflect accurately the intra-arterial pressure. This is particularly seen in the sickest patients; 3) the right ventricular filling pressures do not reflect left sided filling pressures in the state of acute myocardial infarction; 4) there is a definite gradient of mortality between what might be considered Class I and Class IV patients. The Killip definition of Class I patient is a patient with no congestive heart failure. A Class II patient has mild congestive heart failure. A Class III patient has pulmonary edema and a Class IV patient is in shock. The respective mortalities are 7, 13, 50 and 90 percent. Doctor Humphries felt that hemodynamic monitoring is necessary only in Class III and Class IV patients. He pointed out that treatment of shock and myocardial infarction often requires little else than volume being given. He reiterated the fact that right ventricular infarction does occur and that the jugular venous pulse pressure may not reflect left sided filling pressures. In concluding he mentioned the interplay of the Swan-Ganz catheter, the gamma camera, and the echocardiogram in separating out the clinical state of a patient with a myocardial infarction and a new systolic murmur. The interplay of these three modalities can distinguish mitral regurgitation from ventricular septal defect.

The third speaker was Doctor Michael Johnson, Associate in Radiology and Fellow in Cardiology, Duke University Medical Center, Durham, North Carolina. His topic was "Use of Echocardiography: 1975." He pointed out that echocardiography or ultrasound is a pulsed reflected ultrasound. The frequency range is greater than 20,000 cycles per second. The transmitter transmits one percent of the time and receives 99 percent of the time.

He explained the three modes of ultrasound; the A mode for amplitude, B mode for brightness and M mode for movement. He indicated that the echocardiogram was diagnostic in 1) mitral stenosis, 2) mitral valve prolapse, 3) idiopathic hypertrophic subaortic stenosis, 4) left atrial tumor, 5) left ventricular outflow tract obstruction, 6) pulmonary hypertension, 7)

DR. LAWRENCE S. COHEN, Professor of Medicine and Chief of Cardiology, Yale University School of Medicine.

pericardial effusion, 8) left ventricular hypertrophy, 9) left ventricular dilatation and 10) right ventricular volume overload. It is helpful in the diagnosis of 1) mitral regurgitation, 2) aortic regurgitation, 3) bacterial vegetations, 4) congenital abnormalities, 5) bicuspid aortic valve, 6) aortic stenosis, 7) pulmonic stenosis, 8) cardiomyopathy and 9) elevated left ventricular end diastolic pressure.

In closing he demonstrated a new multiple crystal echocardiogram called The Thauma Scan: T—two directional, h—high resolution, a—actual time, u—ultrasound, m—multi crystal, a—assay. This device is a continuous moving echo picture of the subject under study.

The last talk of the day was "Advances in Bundle of His Electrography" by Doctor David S. Cannom, Assistant Professor of Medicine, and Director, Fitkin Coronary Care Unit, Yale University School of Medicine. Doctor Cannom pointed out that the clinical application of bundle of His electrography was in 1) deciphering of complex arrhythmias through delineation of conduction defects, 2) the study of intervention with varying antiarrhythmic agents and 3) deciding on pacemaker therapy. As a research tool it has several applications, 1) understanding atrioventricular conduction abnormalities; 2) analyzing the behavior of diseased conduction tissue and 3) localizing the site of activity of new drugs.

Lastly, he spoke about the features of sinus node dysfunction. One has to look at 1) the clinical presentation, 2) the electrocardiographic manifestations, 3) the electrophysiologic evaluation. He discussed a series of 30 patients at Yale-New Haven Hospital in whom the sinus node recovery time was not a valid indicator of sinus node disease. The majority of these patients had normal sinus node recovery time but on clinical grounds did require a pacemaker.

The conference adjourned after this last talk and plans are being made for a second annual conference in a year.

Confidentiality of Medical Information: Model State Legislation

Pursuant to direction of the House of Delegates in December, 1973, a model state bill on confidentiality of medical information was prepared by the Council on Legislation. The Board of Trustees approved the bill, which will, following the Annual Convention, be distributed to state medical societies for introduction and consideration in state legislatures.

The subject of legislative protection to maintain confidentiality of medical information in the physician-patient relationship is an extremely complex one.

An early draft of the model bill was distributed by the Council on Legislation to state and specialty medical societies as well as to other organizations, in order to provide a broad base of review and to obtain their comments and recommendations. Comments were received from several sources in response to this exposure of the draft legislation, and these were given full consideration.

The Council also had the benefit of information emanating from several national conferences on the subject attended by government and private industry, and a wide variety of professional associations, in which significant issues were raised relative to model state legislation on confidentiality of medical information.

The current bill incorporates changes from earlier drafts based on such comments and upon meetings with, among others, representatives of the health insurance industry. The Board understands that revisions made to earlier drafts substantially meet the concerns of importance to the health insurance industry, without compromising the basic intention of the model bill.

In summary, the bill is intended to provide protection by:

(1) placing reasonable restrictions upon third parties (someone other than the patient or his physician) with respect to unauthorized access to, use of, and further distribution of confidential medical information;

(2) requiring written authorization for release of confidential medical information (except in those situations provided for in the bill);

(3) stating basic requirements for an authorization form for release of confidential medical information;

(4) requiring establishment by third parties of minimal security procedures for safeguarding confidential medical information after it is acquired.

(5) establishing an individual's right to examine his confidential medical information in the possession of third parties and provide a method for correction of erroneous information (with concurrence of physician or upon court order);

(6) placing limitations on the use of compulsory legal process for obtaining confidential medical information;

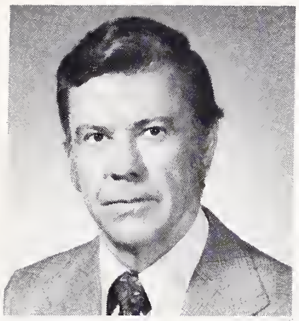
(7) establishing a physician-patient privileged communication statute in all states;

(8) establishing immunity for members of medical peer review committees and protecting proceedings of such committees from discovery; and

(9) providing for penalties for violation of provisions of the bill.

Report of the Board of Trustees of the AMA to the House of Delegates, Annual Meeting, June, 1975.

The President's Page



"Can't anyone here play this game?"

Casey Stengel, c. 1962.

Casey's plaintive query, after watching a particularly bumbling performance by the New York Mets in the early 1960's, seems particularly appropriate to one returning from the Washington medical scene. Simply stated, there is no National Health Policy. While the stated purpose of easily accessible quality medical care at reasonable cost is laudable, it is not credible. There is no consistent strategy; there is no sharing of goals within the organization; there is no effective system to allow for a reliable assessment of the ongoing diverse programs. Even the "misery lobby" is in disarray.

The medical hierarchy varies between instability and chaos. Dr. Robert Stone, Director of the NIH, departed shortly after his eighteenth month anniversary. The National Institute of Occupational Safety, rudderless since early in January, continues to flounder along, losing staff, direction and influence. Dr. Charles Edwards, Assistant Secretary of HEW, left several months ago and his valedictory critique was published in the *New England Journal of Medicine.* He portrayed an incumbent unable to change the status quo, unable to obtain action on his proposals, and reduced to supervising the day to day operation of the bureaucratic apparatus. The most recent defector was Casper Weinberger. In his farewell address he was the most virulent of all, using words such as "villain," "mess" and "jungle" to describe the situation at HEW. Mr. Weinberger's successor, Forest David Mathews, has been characterized as a "very brave man," for he will face the same politically inspired expectations with the same budgetary restraints. Policy at HEW ultimately rests on the vagaries of some five hundred members of the House of Representatives. Because the legislators are in what is essentially a never ending election campaign, all are particularly vulnerable to the demands of their constituents and thus cannot arrive at any purposeful plan or consistent policy. Mr. Kissinger would be a very brief tenant at HEW.

It may be too late but let us at least communicate our dissatisfaction productively and support the present legislation aiming at the establishment of a separate and distinct Department of Health within the Executive Branch. The major share of the Department's involvement in the health care system is presently being administered by Welfare and Social Security agencies rather than by the Health component. Responsibility is diffused among more than a half a dozen assistant secretaries. It is crucial that the AMA and other physician groups recognize the disastrous potential of further deterioration in the federal sector. Any industry that commands eight percent of the gross national product, employs more than five million people and receives in one way or another more than ten percent of the federal budget, deserves its own Secretary who is a full fledged member of the President's Cabinet. Medicine should make this a primary goal for the forthcoming year.

Much of the present and proposed legislation suffers the same defects: the absolute power of the Secretary of Health, Education and Welfare; little or no opportunity for the public comment or professional evaluation; policy development and implementation conceived in secret and carried out by directives with impossible time restraints and parameters. That the courts and the use of injunctions are our only defense is indictment enough. The profession cannot continue to resort to the courts for remedial action because it is economically impractical.

We must take health out of HEW. The establishment of a separate department is essential in order to preserve our pluralistic health care system. If unsuccessful we will be condemned to a politicized, monolithic system designed by social planners, directed by public health officials and evaluated by accountants.

Guy W. Van Syckle, M.D.
President

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CONTRAINDICATION: Idiosyncrasy to this drug.

WARNINGS: Data supporting the use of nitrites during the early days of the acute phase of myocardial infarction (the period during which clinical and laboratory findings are unstable) are insufficient to establish safety.

PRECAUTIONS: Use with caution in patients with glaucoma. Tolerance to this drug, and cross-tolerance to other nitrates and nitrites may occur.

ADVERSE REACTIONS: Cutaneous vasodilation with flushing. Headache may commonly occur, and may be both severe and persistent. Transient dizziness and weakness, in addition to other signs of cerebral ischemia associated with postural hypotension may occasionally be seen. ISO-BID can act as a physiological antagonist to norepinephrine, histamine, acetylcholine and many other medications. An occasional patient may show marked sensitivity to the hypotensive effects of nitrite; severe responses (nausea, vomiting, weakness, restlessness, pallor, excessive sweating and collapse) can occur, even with the usual therapeutic dosage; alcohol may enhance this effect. A drug rash and/or exfoliative dermatitis is occasionally seen.

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PIONEERS IN GERIATRIC RESEARCH

Reflections from the Dean's Office

Robert U. Massey, M.D.

Ascribing moods and passions to a whole nation or culture may imply a kind of anthropomorphism which should make suspect any conclusions drawn from such an activity. However, those of us living in the second half of the twentieth century may have more of a sense of national moods that our ancestors in the first half of the nineteenth. Before the telegraph the flow of information, out of which moods are formed, was limited by the speed of a horse. Now knowledge transmission is instantaneous.

We are linked together by a nerve net of copper wires and electromagnetic waves. When a gun is pointed at the president, all of us know it within an hour. Such a nervous system sustains a kind of national consciousness which properly may be described as being subject to moods as evanescent or as durable as our own.

There has been a mood of hostility to science and technology for almost a decade now, but there are signs that that may be changing. Linus Pauling was one of 13 scientists and engineers who received the National Medal of Science at the White House on 18 September. President Ford, speaking at the ceremony, said: "It is impossible to measure accurately the benefits of our research efforts to the nation and to the world. We do know however that our achievements will be far-reaching and profound." He concluded, "Our nation's future and that of the world depends on the genius of men and women, such as those we honor today." The awarding of the medal to Pauling, long suspect in official circles, seemed particularly auspicious, and the words of the ceremony suggested that officialdom was acknowledging a change in the national mood.

A mood of anti-science is not new in America; our medical history prior to the late nineteenth century is one of almost unrelieved rejection of scientific medicine in favor of empiricism. Fanciful theories and bloodletting seemed more suited to our needs and temperament than the developing science of Europe. Further, scientists were regarded as inimical to religion and contempuous of our system of values. Two world wars and the years which followed brought America to preeminence in the physical and biological sciences, but the tide began to ebb again in the mid-sixties.

Some scientific leaders were identified with the anti-Vietnam War movement, and incurred official hostility. President Nixon gave no National Medal of Science Awards during 1971 and 1972; and in 1973 he abolished the President's Science Advisory Committee, the Office of Science and Technology, and the position of the White House science adviser.

The social revolution of the sixties was populist in nature, and saw science and technology as tools of corruption. The bomb, pollution, the despoliation of nature, the ugliness of our cities, overpopulation, the loss of privacy, and unheard-of new diseases were seen as directly or indirectly coming from science and modern technology. This mood pervaded all of society and extended from right to left. Some advocated closing the laboratories and factories until the world could be put right again.

Because these years were a time of unsettling social and cultural change, there was a retreat by some into the occult and mystical. These movements are against reason and incompatible with science. Over 25 percent of our population believes in astrology, and according to a recent poll, 80 percent know the sign under which they were born. The second law of thermodynamics is fundamental to our understanding of nature. Would 10 percent know it?

The change of mood in the White House toward science hopefully reflects a change in the national mood. Science and technology are part of the fabric of our Western culture and cannot be cut and picked out without undoing the whole tapestry. Our problems of over-population and deteriorating environments will not yield to nontechnological or nonscientific solutions. Perhaps also there is a recognition that America cannot maintain her position in the world economy without the strongest commitment to science and technology.

The great ages of science, the Renaissance, the seventeenth century and the fifties of our own century were periods of optimism. High spirits, reason, and creativity go together. Perhaps the awarding of the National Medal of Science to Linus Pauling marks the beginning of the end of a decade of gloom.

ROBERT U. MASSEY, M.D., Dean and Professor of Medicine, University of Connecticut, School of Medicine, Farmington.

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Connecticut Medicine

EDITORIALS

Title XX: A Major Threat to Privacy and a Setback for Informed Consent

The Title XX Amendment[1] to the Social Security Act went into effect on October 1, 1975. Its basic dual purpose is to give the States the privilege of deciding the mix of services funded by the Social Security Act and to place under close scrutiny the determination and re-determination of eligibility for the recipients. In President Ford's words, a major goal is to eliminate "the welfare chiselers." The services are directed at reducing dependency, maintaining self-support, preserving families, preventing neglect and abuse of children and improving the utilization of institutional care. Some of the State organizational structures employed in reaching these goals include child care services, protective services for children, services for children and adults in foster care, health support services and special combinations of services which meet the special needs of children, the aged, the mentally retarded, the blind, the emotionally disturbed, the physically handicapped and alcoholics and drug addicts. To meet the needs of the affected population, the program is coordinated with and utilizes Title IV-A, AFDC; Title IV-B, Child Welfare Services; Title XVI, Supplementary Security Income (aged and the blind); Title XIX, Medicaid, plus related human services programs, e.g., for the aged, children, developmentally disabled, corrections programs, etc.[2]

Payments to the States by DHEW on a quarterly basis are at 90% of expenditures for family planning activities, and 75% for the services noted above. Connecticut's General Fund received $37 million from Federal Social Services Matching Funds under the various titles last year and now must replace $36.75 million speedily under the Title XX requirements. Intense activity on the State level is underway to avoid weakening its financial structure with the attendant risk of an increase in bond interest rates or failure to find bond purchasers. Connecticut's problem is replicated in New York, Massachusetts, Ohio, Illinois and perhaps ten more states.

Eligible individuals include those already receiving AFDC (Title IV-A) and Supplementary Security Income (Title XVI) or State supplementary payments plus those whose family monthly gross income is not over 115% of the median income in the State adjusted for the size of the family. For some services, the limitation is less than 80% of the median income. In Connecticut, the median income of a family of four is quoted at $15,404 for 1975-76. There are no income constraints where services are aimed at preventing or remedying neglect, abuse or exploitation of children and adults who cannot protect their own interests.[3] Despite the broadening of income requirements, Title XX's goal is to reduce the number of applicants for assistance through the determination of eligibility by the State or the provider which is to occur "not less than every three months."[4]* In 1972, California newspaper headlines trumpeted the alleged discovery of "welfare chiselers," most of whom were honest citizens whose welfare checks plus minimal earned income were out of phase with the quarterly eligibility determinations. The opportunity is still ripe for making political hay out of the plight of the affected population requiring Title XX assistance.

Rough estimates in Connecticut suggest that perhaps 20% of the State's population of 3 million will be recipients of Title XX assistance during the year commencing October 1975. The broadening of income requirements means that large numbers of the white middle class will enter the welfare computers for the first time. Under Title IV-A, the lowest social classes were subject to routine confidentiality breaches which were essentially unchallenged by civil libertarians.

In Connecticut, Title XX activities are served by in-State structures (juvenile justice system, etc.) and by contractees who include psychiatric clinics for children, Planned Parenthood, Legal Aid and Visiting Nurse services. Much of the funding provided by Title XX is for medical, psychiatric and ancillary activities. While the individual State may select most of its service clusters, it is almost inconceivable that health services can be excluded from Title XX funding. Form W-2000 of the Connecticut Department of Social Services requests name, address, Social Security number, date of birth, ethnic, educational, religious, and marital data apart from expected income information. This requested information far exceeds what is required for eligibility determination. Because the State is accountable for the use of Federal funds, there is explicit pressure on in-State and contractee organizations to elicit face sheet data from applicants without informed consent, and without the services revealing to the applicants that providing this data is optional. This rampant violation of the informed consent principle is encouraged by senior State officials who fear that diminished data bank

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**Two weeks ago DHEW amended redetermination of eligibility to read "not less than every six months" in order to reduce costs.*

documentation will lead to diminished reimbursement by the Federal government. In turn, the service involved will be proportionately reduced in funding by the State Title XX administrators.

What mechanism does the State employ to determine eligibility? The applicant supplies income documentation to the State agency or to the provider. In addition, the Connecticut Department of Labor, Employment Security Division, collects from each employer a quarterly report on wages. These data tapes have been printed out with identifiers and cross-indexed by names in alphabetical order and by Social Security numbers. The print-outs have been transferred to the Department of Social Services which administers Title XX and will be integrated with previously taped data describing recipients under Titles IV-A, XIX, IV-B and XVI. The applicant's income documentation will be matched against the integrated data. This development is consonant with the Title XX Law,[5] the regulations[6] and other confidentiality safeguards in the public welfare sector cited in the Federal Register[7],[8] which allow data sharing by State agencies for administrative purposes in accord with that State's confidentiality statutes. A fifty State survey of welfare confidentiality statutes shows them to be largely flaccid and ineffective except for the States of Minnesota and Utah where welfare recipients are covered by fair information practices acts. Connecticut statutes make violations punishable by not more than a two hundred dollar fine and imprisonment of not more than six months, or both.[9] It is ironic that "welfare chiselers" and State functionaries are punishable by the same statute, the same section, and the exact same lines which address penalties to "chiselers" and functionaries together!

A central data bank in Hartford serving the cluster of services is available theoretically to any State administrator of Title XX services. We expect that an official querying the computer about a recipient is not engaged in a sinister pursuit, but the opportunity is present nonetheless for fishing expeditions. Clearly, the individual is not protected by the kind of quality safeguards stipulated by the Privacy Act of 1974.[10] In his relations with the State, he is not protected by policies which define rights of access for adults and minors, or by procedures for amending stored information which may be incorrect, or by more significant criminal penalties for confidentiality breaches and by mandatory educational programs for civil servants who handle sensitive data.

The absence of effective safeguards is no idle concern. Within Title XX is an amendment to Title IV, adding Part D[11] which establishes a Parent Locator Service. In seeking absent parents, the Service is a window through which Title IV-A and Title XX collected data can be exchanged between the States. Here is the framework for an early national welfare data base which cuts across all jurisdictions and is condoned by inadequate Federal statute and regulation.

In one bold stroke, Title XX has rent a large hole in the fabric of emerging confidentiality and privacy legislation. This Law was passed by a strange coalition of extreme conservatives, determined to rid the welfare rolls of "chiselers," and liberals who wanted more information about citizens to design more responsive social welfare programs.

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PSROs

Despite former Senator Bennett's avowed good intentions that his law, the Professional Standards Review Organization, would give to the medical profession rather than to lay people the responsibility for overseeing the federally financed Medicare and Medicaid programs, the American Medical Association has from the beginning challenged whether peer review, geared largely to cost control, could be effective without reducing the quality of patient care. Nevertheless the PSRO law was passed. Though many physicians and state medical societies still feel they should react with non-compliance, the AMA, while maintaining it was a poor law, decided it should take a leadership role to assure that the best interests of the public and profession would be served.

PSROs seem to be progressing, and like it or not, they are with us. We in this state are fortunate in being represented by physicians whom we know and trust. They understand that many physicians consider it a bad law, but they intend to make the best of it. In all fairness, we physicians should not let any aversion we have toward the law be directed at those in our state entrusted with its administration.

To most physicians PSRO is still only an acronym on paper, but, like so many federal programs, it is gradually enveloping us. It will be worthwhile, even necessary, periodically to reexamine how it is functioning in practice.

Essentially, PSROs are local peer review organizations composed of physicians, established by the Social Security Amendment of 1972 "to assure that care provided for beneficiaries of the Medicare, Medicaid, and Maternal and Child Health Programs is medically necessary, meets professionally recognized standards, and is rendered in the most appropriate setting."

Though each PSRO will set up its own standards and criteria in the form of suggested and "normal" treatment for just about every important disease, it will be guided by those criteria for care developed by the American Medical Association working in conjunction with the various national medical specialty societies, as a result of a contract from the Department of Health, Education, and Welfare.

The entire country will be covered by PSROs, each governing a geographical area, made up of licensed physicians of medicine and osteopathy practicing in that area.

Physicians may refuse to participate or form a peer review organization. In that case, the HEW Secretary may, after January 1, 1976, turn this function over to some other group: a medical school, a department of health, an insurance company, or the like. If physicians or other health care professionals refuse to review each other, the government will appoint others to do so. That is the dilemma: not which is the better choice, but which is the worse.

A lower federal court, in a suit brought by the American Association for Physicians and Surgeons, has declared the legislation constitutional, the Association may appeal the decision to the Supreme Court.

Let us remember the differences between *concurrent review* and *medical audit*. The former examines the necessity of admission to inpatient facilities and restricts length of stay to what is medically necessary. Medical audit means a retrospective analysis of the care given by health practitioners and is directed mainly to quality. It only implies that deviation from normal standards of medical practice discovered in such analyses should be corrected by continuing medical education.

Though the profession is still skeptical of the aims of this federal legislation, governmental spokesman still maintain that not only costs but quality is important. For now at least, the government is asking, even demanding, that the medical profession be accountable for monies spent and quality of care in these three programs. Whether or not the idea with its procedures spreads beyond these programs into others, especially the private sector, remains to be seen. It is probable, especially if determined to be practical and successful *by third parties.*

Of special concern to the profession, and justly so, are three issues: the attempt by PSROs to judge individual cases by professionally recognized standards; confidentiality in the physician-patient relationship; and the possible use of such standards by litigious individuals and lawyers.

Though many physicians still are adamant in their refusal to cooperate, because PSROs are now the law of the land the policy of the State Medical Society is one of cooperation, ever alert to anything that adversely affects the quality of patient care, or to conflict with Society policy. Also, the AMA stands ready to assist any state society, and its Board of Trustees has been instructed to use all legislative and legal means to rectify any short-comings. Let us not only be alert, however, but also open-minded and constructive.

Fred Fabro, M.D.

Status of PSRO

1. AMA's 19 proposed PSRO amendments introduced in 94th congress. Directed at ensuring appropriate regs and directives, of particular concern are parts of law posing potential dangers in areas of (1) confidentiality (2) professional liability (3) quality of care and (4) excessive authority in HEW sec.
2. 58 planning PSROs under contract, plus 63 conditional PSROs and 13 PSRO state support centers.
3. 125,000 MDs eligible to join PSROs in 121 areas. 61,000 (49%) have enrolled.
4. AMA, under contract with HEW, coordinated development of model sets of criteria for screening appropriateness, necessity and quality of medical services in hospitals. Actual criteria developed by national medical specialty societies. First edition of criteria distributed July, 1975, second edition due June, 1976.
5. To assist practicing physicians concerned with PSRO implementation, the AMA has developed a PSRO Q and A pamphlet; PSRO implementation and resources booklet and a PSRO audio-slide presentation. All are available from the AMA's division of medical practice.
6. AMA's council on medical service has responsibility for monitoring and evaluating PSRO programs and making policy recommendations.

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Month in Washington

The American Medical Association brought the concerns of American medicine to the attention of the Congress a number of times during the season of the Harvest Moon.

At a hearing before a House Judiciary Subcommittee looking into the charge that federal agencies may be taking too much power into their own hands, the AMA testified that "although potentially inherent in many agencies, abuses have become more obvious in the health agencies during the past 10 years."

Raymond T. Holden, M.D., Chairman of the AMA Board of Trustees, said the many health programs Congress approved during this time "because of the complexity of the solutions inherent, were often mere skeletons. In its haste to provide operational programs, Congress often has allowed executive agencies and bureaus to add the flesh."

As a result, Dr. Holden said, the final program often is "unrecognizable" from what Congress had in mind. He charged there has been intentional nonconformance with Congress' intent, "an insatiable appetite for more regulation" in which the bureaucracy "runs amok by attempting to regulate any activity which touches upon, influences, or is affected by the Congressional program." The time is long overdue to put a stop to regulatory abuse, the AMA official told the Subcommittee.

Dr. Holden pointed to the Health, Education and Welfare Department's actions on Utilization Review. After withdrawing the initial proposal for hospital pre-admission certification, strongly opposed by the AMA, the Department went ahead with final rules that were "equally objectionable" in requiring review of all patients within 24 hours. Dr. Holden said provisions of the basic Medicare law were "improperly invoked" and irrelevant provisions of other programs were "imperiously used" by HEW. The AMA brought suit and was successful in obtaining a preliminary injunction upheld on appeal.

Edgar T. Beddingfield, M.D., Vice Chairman of the AMA's Council on Legislation, told the Subcommittee the AMA is backing a measure to amend the Administrative Procedures Act to require agencies to follow certain procedures. The bill, introduced by Rep. Thomas Kindness (R-Ohio), calls for adequate time for comment, and expands the type of governmental actions that would come under the rule-making regulations. The bill (H.R. 10301) requires the agency to include "the rationale in accepting, rejecting, or accepting in modified form the comments received by the interested parties." Dr. Beddingfield said this is to "assure that the agency not indulge further in its practice, often utilized, of rejecting out-of-hand comments with which it does not agree . . ." Any final rule substantially changed from its proposed form would have to go through the process as a proposed rule to allow comment, he said.

* * *

The AMA told Congress it is time to improve the health of Indians.

"The Association believes that today, when the nation appears ready to correct some of the wrongs done the first Americans, there is an opportunity to bring the health status of the American and Alaskan Native to the level of the general population, rather than remaining decades behind."

Robert B. Hunter, M.D., a member of the AMA Board of Trustees, said the Indian Health Service" has done well with what it has, but it does not have enough." Dr. Hunter, testifying before the House Subcommittee on Indian Affairs, endorsed legislation before the House and Senate to improve health services for Indians.

In the past, increases in the budget for Indian health services have done little more than keep up with inflation, the physician told the lawmakers. "They have enabled the Service to maintain its health care system, but not to improve it." Only a few new facilities have been built or old ones modernized, Dr. Hunter noted.

Based on extensive studies by the AMA and others, Dr. Hunter said, one solution to the manpower needs must be to attract more Indians to the health professions. He supported provisions in the measures to train more Indian physicians through scholarships and in other ways.

Changes were recommended to allow employment of private health professionals on a contract basis to meet backlogs in health care services needed by Indians. An immediate construction and modernization program for health facilities was endorsed as well as provisions requiring Indian participation in planning and program operation.

He urged passage of a provision for a one-year study to investigate alcoholism and mental health among Indians.

Prepared by the Washington, D.C., Office of the American Medical Association.

* * *

Bills before Congress to impose additional regulations on lobbying activities were opposed by the AMA as "unnecessary and discriminatory."

The goal of the legislative proposals for "open government" could be defeated by the reform plans which could stifle legitimate and needed contacts of citizens and their organizations with the Government, Executive and Congress, the AMA said.

In a statement for the House Judiciary Subcommittee considering the issue, the AMA noted the multitude of federal health programs that involve communications by physicians and their organizations with the Government. "This access is necessary in the future to assure the maximum input of the expertise and experience of the physician and of his practical concern for the individual beneficiary," the AMA said. "This input must not be subject to unnecessary regulation."

One upshot of the legislation would be to bring under federal controls great numbers of organizations and people who heretofore have not been considered lobbyists, including state and local medical organizations.

A provision of a major lobbying bill could control organizations with periodic publications which report on legislative and regulatory affairs, the AMA said. Such organizations would have the alternative of complying with the reporting and other burdens imposed by the bill, or to cease reporting on regulatory and legislative affairs of legitimate interest to members, according to the AMA statement.

Another provision could require the reporting of all members of organizations who contribute more than $100 during a year, possibly including dues. "Such a requirement would be extremely onerous and in many situations compliance would be impossible," said the AMA. "These provisions of the bill would be harsh and unfair and could serve little or no purpose except harassment."

In discouraging communications with Congress, the goal of open government would be defeated, the statement declared.

* * *

A resolution backed by the AMA has been introduced in Congress to authorize the President to designate the week of April 4, 1976, as National Rural Health Week. The resolution, aimed at spurring Congressional and public interest in rural health problems, was introduced in the House by Rep. Ed Jones (D-Tenn.) and eight cosponsors. A resolution is slated to be introduced in the Senate soon. Other House sponsors were Reps. Bob Bergland, (D-Minn.), John Breckinridge, (D-Tenn.), Tim Lee Carter, M.D., (RKy.), Allan Howe, (D-Utah), James Jeffords, (R-Vt.), Matthew McHugh, (D-N.Y.), Gunn McKay, (D-Utah), and Don Young, (R-Alaska).

* * *

The American Medical Political Action Committee has asked the Federal Election Commission to permit political groups to solicit support or endorsement of federal candidates through communications with members without having to subject such expenditures to the disclosure requirements of the law.

Rex Keynon, M.D., a member of the AMPAC Board of Directors, told the Commission the Elections Law approved by Congress provides that contributions or expenditures "shall not include communications by a corporation to its stockholders and their families or by a labor organization to its members and their family on any subject." Another section provides that expenditure does not include "any communication by a membership organization . . . to its members . . ."

However, Dr. Kenyon said, the Elections Commission would appear to limit the directive of Congress allowing communications on any subject to prohibit the endorsement or solicitation of support for a federal candidate or office-holder. "We believe this is unwise," he said.

Stressing that AMPAC "has no objection whatever to the full disclosure of any and all of its activities," Dr. Kenyon said AMPAC would like to assure its members "that they can participate openly and freely without fear of being in violation of unduly restrictive laws and regulations."

* * *

Quick action has been urged by the House Health Subcommittee staff to block rollbacks in Medicare reimbursement rates for physicians during the current fiscal year.

Charging that the HEW Department's index for calculating reimbursement has had the "unintended and unanticipated effect" of pushing some current payment levels below those of last year, the staff said in a report that Congress will have to move quickly "in order to make it as administratively feasible as possible to modify the current situation."

The Subcommittee, headed by Rep. Dan Rostenkowski (D-Ill.), voted tentative agreement on amending the index "so as to preclude any rollback of fiscal year 1976 prevailing fees below fiscal year 1975 prevailing fees."

The change was one of the major goals sought by the AMA in testimony before the Subcommittee last month. The Administration had acknowledged the problem, but refused to support legislation to correct it, merely noting that the rollback problem would not reoccur in future updates of prevailing charge screens.

In a staff document, the Ways and Means Subcommittee noted that the economic index for physicians' fees was not issued by HEW until last April. Almost two and a half years since the enabling legislation was passed. Only 30 days were then allowed for comment from interested parties, a time squeeze that generated such criticism that the regulations were the subject of hearings by the Subcommittee June 12 and then last month.

"It should be pointed out that if HEW had not delayed so long in implementing the regulations, there would not have been any rollbacks in prevailing charges," the report said.

One of the major criticisms levelled at the rollback by the staff was the effect on physician acceptance of assignment under Medicare.

"It is predictable that the rollbacks will further discourage physicians from accepting assignment" and "result in an even further decrease in the assignment rate with the consequence that beneficiaries will pay an even larger proportion of their medical bills out-of-pocket," said the report.

To illustrate how the rollback operates, the report said a beneficiary or a physician who was paid $20 for an office visit in fiscal year 1975 may get only $18 in the current fiscal year 1976.

Beyond the rollback question, the staff pointed out that members of the medical profession (including the AMA) "expressed great concern over the individual indices used to make up the overall index" which was designed to gear Medicare reimbursement with rising costs of living in general. Critics contended that the indices "did not fairly represent their increases in practice expenses. In particular, the index does not allow for the increases in malpractice insurance premiums physicians have experienced."

Edgar T. Beddingfield, M.D., Vice Chairman of the AMA's Council on Legislation told the Subcommittee last month that the physician's fee index developed by HEW was an "abuse of the regulatory process." Dr. Beddingfield urged that the economic index be repealed.

* * *

A catastrophic-oriented national health insurance plan has been introduced into the Senate by Russell Long (D-La.) and Abraham Ribicoff (D-Conn.).

The bill, much the same as last year's version, was co-sponsored by 11 other Senators including Senate Majority Leader Mike Mansfield (D-Mont.), Senate GOP Leader Hugh Scott of Pennsylvania, and Senator Herman Talmadge (D-Ga.), Chairman of the Finance Subcommittee on Health.

The Long-Ribicoff bill has been the dark horse challenger in the NHI picture, opposed by all of the major outside groups offering NHI programs. It is especially repugnant to labor, and has been fought by the Administration. As the bi-partisan list of Long-Ribicoff sponsors indicates, however, the measure has a lot going for it in the Senate where it ranks with organized labor's Health Security Act championed by Sen. Edward Kennedy (D-Mass.) as a contender.

Long waited a long time to put in his bill this year, prompting speculation he figured NHI was a dead issue or that he had changed his mind about his bill. As it turned out, Long chose an introduction time when interest appeared to be reviving on Capitol Hill for a catastrophic approach to NHI.

continued on page 802

Letters To The Editor

Letters to the Editor are welcomed and will be published, if found suitable, as space permits. Like other material submitted for publication, they must be typewritten *double spaced* (including references), must not exceed 1½ pages in length and will be subject to editing and possible abridgment.

MALPRACTICE AND THE GALLUP POLL

To the Editor: It seems to me that the article on p. 553 of the September 1975 issue of *Connecticut Medicine* has a very misleading title, with an erroneous conclusion.

The title, PUBLIC HOLDS DOCTORS LIABLE FOR MALPRACTICE CRISIS, is followed by the article by George Gallup, reprinted from the *Hartford Courant.*

Paragraph 3 states, "The proposal which wins the public's greatest support is one requiring the medical profession to do a better job of policing itself." (Who would *not* be in favor of that anyway?)

To me, this title and paragraph implies that malpractice suits are due mostly to incompetent doctors making mistakes (doing wrong, malpractice) due to their incompetence.

Do you think that that is really true? Some of the physicians sued for malpractice have been outstanding surgeons, urologists, gynecologists, neurosurgeons, etc.

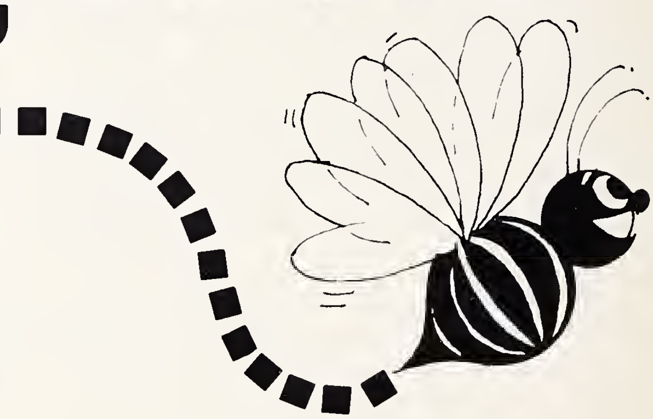
How could *anyone disapprove* of the proposal which *gained the public's greatest support,* and I quote, "Require the medical profession to take more effective measures to get rid of incompetent doctors." That, in itself, is a great idea, but would not solve the malpractice problem. I personally feel that lawyers and patients who undertake unjustifiable malpractice suits should be liable for countersuits, and that all claims for malpractice should be heard first by a panel of 4-5 persons: a physician of the same type of practice, a trial lawyer, a judge, and an insurance medical claims adjuster. If this panel feels that the case is justified, then it should be settled or go to trial.

Walter A. Schloss, M.D.

Hartford, CT.

“For when was honey ever made with one bee in the hive”...

Thomas Hood, *The Last Man*



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PSROs in Connecticut—Past, Present, and Future

James H. Root, Jr., M.D.

Professional Standards Review Organization (PSRO) legislation was passed by Congress and signed by the President on October 30, 1972. It is known as the Bennet Amendment of Public Law 92-603, which amends the Social Security Act.

This legislation is based on the concepts that health professionals are the most appropriate individuals to evaluate the quality of medical services and that effective peer review at the local level is the soundest method for assuring the appropriate use of health care resources and facilities. It is the means by which the legislation attempts to translate these concepts into practice.

The PSRO program is intended to achieve two basic principles: 1.) to assure the quality of medical care and 2.) to assure the appropriate utilization of health care services.

The organization is required to review Title XVIII, XIX and V cases in short-term acute care hospitals and later in other health care institutions, such as skilled nursing facilities (SNFs). In time, after the PSRO is operating effectively, fiscal intermediaries will be required to abide by its determination as to the medical necessity and appropriateness of services in paying Medicare and Medicaid claims.

The responsibility for performing review will be delegated to the medical staffs of hospitals found by the PSRO to have the capability. However, the ultimate responsibility for all review decisions and overall effectiveness of the review system is retained by the PSRO. When a PSRO is deemed to be performing review effectively, DHEW will waive duplicative review provisions related to the type of review being effectively performed by the PSRO. Thus, if PSROs accept the challenge and perform well, they will become the sole organization in their area responsible for the conduct of health care review for Medicare, Medicaid and Title V recipients. It must be remembered, however, that the fiscal intermediaries will be for a time monitoring the PSRO even though the intermediaries are compelled to accept from the time of official delegation or non-delegation to pay the claims if the PSROs deem the care given to be medically necessary.

While the PSROs are required to review care provided to Medicare, Medicaid and Title V beneficiaries, they are encouraged also to review care provided under other programs; e.g., private insurers, Blue Cross, Blue Shield, etc.

Though the Connecticut State Medical Society opted for a single statewide PSRO, the State was split into four parts: PSRO I, Fairfield County; PSRO II, New Haven and Litchfield Counties; PSRO III, Hartford County; and PSRO IV, Middlesex, New London, Windham and Tolland Counties.

All four PSROs went through their Planning phases, and all four PSROs received their Conditional contracts with the government as of July 1, 1975.

Present and Plan

The question arises as to what we do now that we have achieved conditional status. Our main jobs are quite clear.

We are supposed to develop Memoranda of Understanding with Medicare, Medicaid and Title V (Maternal and Child Health Agency).

We are supposed to develop Memoranda of Understanding (MOUs) with all of the acute care short-stay hospitals in our respective areas.

We are supposed to develop criteria in each hospital with hospital input. A lot of this has been done already.

We are supposed to delegate fully or partially all of those short-stay acute care hospitals that merit delegation for review in their own hospitals. The questions can be asked as to how we do this and what we mean by review. This is broken down into several categories.

One is admission certification. There are mutually acceptable criteria for admissions which must be checked by the review coordinator. Some admissions are automatic, e.g., question of myocardial infarction.

Continued stay review is based on accepted criteria, and a length of stay (LOS) is assigned to each patient on admission. The case is reviewed by the review coordinator a day or two before the LOS expires. Discharge planning is started immediately after the patient is admitted. If an extended LOS is anticipated or requested, the review coordinator, on the basis of criteria she is given by the medical profession, either extends the LOS to a specific day in the future, such as the 75th percentile Eastern PAS (the initial LOS is usually based on the 50th percentile Eastern PAS) or refers the case to the reviewing physician if she cannot extend the stay. The reviewing physician then makes the decision, and discusses the case with the attending physician. If they cannot agree, there is a mechanism for appeals: first to another consulting physician; then if necessary to the Peer Review Committee of

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the hospital if delegated; then to the PSRO review committee and then under certain circumstances to the Secretary of HEW through the State PSRO Council and under more extreme conditions to the Judiciary itself.

Admission certification and continued stay review, or LOS extensions, all fall under the general category of Concurrent Care Review. Quality Care Assurance is another type of Concurrent Care Review in which the treatment of the patient is reviewed in depth during his stay in the hospital. This would be done rarely. This also can be applied to Ancillary Service Review.

Another important cog in the review wheel is Medical Care Evaluation Studies (MCEs). These start with retrospective audits and are retrospective mechanisms. First a topic is picked for the MCE study. This can be done by the audit committee, the hospital, the PSRO or even by the Secretary of HEW. Different hospitals can interact in MCEs. Next the size of the study is determined, and criteria are developed by which the evaluation is to be measured. The MCE will have the potential to result in recommendations leading to change to improve medical care.

After criteria have been selected, the audit develops instructions to inform the non-physician assistants how to determine the conformance or non-conformance to the chosen criteria during a chart review. Variations of the criteria are noted and determination is made to see if there are clinical justifications to such variation. Those variations that cannot be documented as clinically justified are carefully analyzed to detect patterns of institutional deficiency, group deficiency or individual deficiency.

Each hospital will be required to provide the PSRO with current listings periodically of MCEs in progress, completed or projected. The PSRO will prepare a catalog of these studies and circulate it among all the short-term acute care hospitals in its area. In the case of joint studies undertaken by the PSRO, these studies will be abstracted and published and distributed to the area hospitals and other PSROs.

Each hospital is supposed to do a certain number of MCEs per year.

Other types of review usually done by the PSRO itself are physician profiles, patient profiles and hospital profiles.

When you put all these review processes together, particularly MCEs, you may find that certain deficiencies in quality exist. Now you can do something about it.

The first step would be to refer the matter (if it were a medical quality deficiency) to the Continuing Medical Education Committee of the hospital. Another follow-up MCE study a few months later or another follow-up physician profile might show that the deficiency had been eliminated. Otherwise further education and possible persuasion methods might have to be employed. Hospitals will supply the PSRO with updated copies of all continuing medical education programs every six months.

The whole object of this process, however, is not to be punitive and apply sanctions but to educate where deficiencies occur.

In order to get all of this review material, particularly concurrent care, pulled together, we need a data system. By the time this article has been published I hope the problem will have been solved. However, we are now right in the middle of putting this together. First of all you want to know what material you want to get out of the data system, and then you have to determine specifically what elements you have to put into the computer to provide the solutions you need. This is no easy task. Not only do we need a data system but we need it now. We have to pick an outfit that has the proper hardware (computer facilities) and can help organize the software to go into the hardware in the proper fashion.

After we get the data apparatus all set up and in operation, we can start our delegation process in earnest. Already we have people in the field working with the hospitals and helping them to learn what we need in the way of information from them in order to make the system work. So far most of the hospitals have been most cooperative and are working hard toward this goal.

Some hospitals are very sophisticated and need little help. Others need a lot of help. Some hospitals are just learning to do audits. Other hospitals use LOSs which are quite different from those used by most other hospitals in the area. There are bugs in the system, but these bugs are being worked out, and the system will work.

We suspect with reasonable certainty that some people in government are more interested in the cost factors than the quality factors (I have never heard anyone admit this openly). However, the law mandates that we concentrate on quality and save money where we can without sacrificing quality. This is what we are bound and determined to do.

Future

The timetable for delegation or partial delegation of hospitals extends from October - November, 1975, through February, 1976. Those parts of the review not delegated to the hospitals themselves will have to be done by the PSRO itself.

As reports come in, we shall monitor the activities of the hospitals to make sure that the high quality of care continues and, where necessary, is improved. This demands a close working relationship between the

PSROs and the hospitals and their medical staffs.

Toward the end of this fiscal year we shall start working with long-term care facilities, particularly Skilled Nursing Facilities (SNFs) and Mental Health Hospitals. The systems developed here will closely parallel the activities developed in the acute care short-term hospitals. This will be a big job.

In the meantime, Foundations for Medical Care and/or PSROs may start working with the non-federally funded patients in the acute care short-term hospitals. The Hartford Foundation for Medical Care (Hartford Health Care Plan) started to do this even before PSRO arrived on the scene.

It is becoming more apparent as time goes on that PSROs are here to stay. All of the major proposals for national health insurance rely upon PSROs not only for hospital and nursing home review but for ambulatory care as well.

Connecticut Medical Institute (CMI)

The Connecticut Medical Institute evolved from and was initially financed by the Connecticut State Medical Society. This happened just about the time that PSRO came on the scene, and, I believe, it was initially suggested by the Connecticut State Medical Society's Peer Review Committee, which at the time was advising with Connecticut General Insurance Company on Medicare B cases.

The long-range goal of the CMI was to create peer review throughout the whole State of Connecticut. Its short term and immediate goal was to act as a Technical Support Center for the four PSROs in Connecticut. This is what it has done and is doing. Its main job is to coordinate and assist the Connecticut PSROs in accomplishing their ends and in dealing with the government insofar as possible on behalf of the PSROs.

The CMI has been the agency that set up meetings on MOUs both with federal agencies and the hospitals. It has been working hard on the data problem. It has discussed data and data flow with the hospitals. It has set up meetings to discuss Long Term Care Facilities and Mental Health Institutions. It helped set up the contracts with the government having to do with PSRO Planning and Conditional Contracts. The CMI has planned a MCE seminar to take place in September, 1975. It has been active in helping to develop criteria.

The CMI was one of the catalysts which enabled the formation of the Northeastern Conference of PSROs (New England States). There are thirteen PSROs in this Conference. Eleven of these PSROs became conditional on July 1 of this year.

This Conference has met three times: once in Maine to discuss mutual problems; once in Boston, with Dr. Goran, Director of BQA (Bureau of Quality Assurance) to try to resolve some of these problems; and once in Auburn, Massachusetts, to discuss common problems and plan for the first annual meeting of AAPSRO in California, which was held in early August this year. The CIM (Commonwealth Institute of Medicine), which is the Technical Support Center for Massachusetts and several other New England States, cosponsored these conference meetings.

The AAPSRO is the American Association of PSROs. Since the eleven conditional PSROs in the Conference made up 20% of the conditional PSROs in the country, we felt that we deserved at least two seats on the twenty-man Board of Trustees of the AAPSRO. Ten of these elected were from the AAPSRO membership. We got two, Dr. Andrew Canzonetti of Hartford, and Dr. James P. Pilliord of New Hampshire.

The common problems that seemed to concern most of the members of the Northeastern Conference centered about organizational integrity (e.g., Why doesn't the government allow us to decide a few things for ourselves?) and the inability to shift line items in our budgets. Maybe we'll find power in unity. Maybe we won't. We've won some points, and we've lost some points. Time will tell. However, in any event the exchange of ideas is always profitable.

To sum up—all four PSROs in Connecticut have received conditional contracts. In spite of hazards and roadblocks, I think we shall prevail and keep the review of quality of medical care in the hands of the medical profession.

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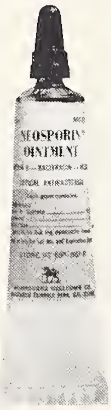

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A Mobile Emergency Cardiac Care Unit: Analysis of Initial Data

Joseph Robert Anthony, M.D. and Lucille Semeraro

Acute myocardial infarction is the largest single cause of death in the United States accounting for nearly 700,000 lives a year. Forty percent of these deaths take place during the first hour when fatal arrhythmias are most likely to occur,[1] and two-thirds of the deaths occur before the patient ever reaches the hospital.[2] Recognizing the need to extend emergency care to the heart attack victim sooner, a Mobile Coronary System was established in Belfast, Northern Ireland in 1966.[3] Since that time, many cities in the United States, the Soviet Union, and western Europe have organized similar emergency services.

A Mobile System of Emergency Cardiac Care was instituted at St. Mary's Hospital in Waterbury, Connecticut in December, 1972.[4] The following study is an analysis of a portion of the data of the first 550 runs by its Coronary Care Ambulance (The Heartmobile).

Materials and Methods

The Heartmobile services a population of 220,000 people, which includes the city of Waterbury and the surrounding towns. St. Mary's Hospital utilizes a van-type ambulance containing a portable suction unit, a battery-operated electrocardiograph machine, a battery-powered portable D.C. defibrillator and oscilloscope, and portable oxygen tanks. The vehicle was chosen for its compactness, easy maneuverability in traffic, durability, and provision of adequate space for such procedures as cardiopulmonary resuscitation and defibrillation. It carries communication equipment to maintain radio contact with the physicians at the hospital, both from inside the Heartmobile and from the site of the victim. It also carries a portable radio and telephone ECG telemetry unit. Cardiac medications and intravenous fluids are kept in an emergency box in the Coronary Care Unit. These include medications to relieve pain, treat shock and cardiac failure, stabilize rhythm and maintain blood pressure.

The Heartmobile team consists of two specially trained paramedics, a Coronary Care Unit nurse, and a nurse from the Emergency Room. Maintaining the radio and telemetry unit at the hospital, either in the Emergency Room or in the Coronary Care Unit, are cardiologists or Emergency Room physicians, and nurses from the Coronary Care Unit and Emergency Room. The entire Heartmobile team has had special courses in emergency cardiac care.

All calls received by the Heartmobile come directly into a central dispatcher on a specially designated line (573-1313). Though an emergency 911 number is in effect in Waterbury, the line is not uniform for the surrounding towns. Where it is available, it puts the caller in direct contact with the local police or fire department, who in turn would have to make a second call to dispatch the Heartmobile. This second call would introduce a further loss of time and might also incorporate errors in transmission.

The Heartmobile dispatcher is specially trained to recognize symptoms indicative of possible heart attack or other problems requiring the Heartmobile's special assistance. The dispatcher, on receipt of symptoms suggesting a myocardial infarction, will immediately dispatch the Heartmobile with its paramedics, who are available 24 hours a day, seven days a week. He will alert by radio signal the nurses in the Coronary Care Unit and the Emergency Room who will pick up the emergency box and meet the Heartmobile in the front of the hospital. The average response time from the time of receipt of call to the time the Heartmobile with paramedics and nurses are on their way to the victim is less than 50 seconds.

While the Heartmobile team is being dispatched, one of the hospital's doctors (usually a cardiologist) is notified. He monitors the telemetry unit and directs the Heartmobile team by open line radio communications. Both the Coronary Care Unit and Emergency Room are equipped with a radio receiver and transmitter, an oscilloscope, and a strip chart recorder to receive the incoming ECG signal.

Upon arrival at the scene, the patient is immediately prepared for telemetry and medical treatment. (Figure 1). An intravenous line is kept open on all patients and if necessary, medication is given on command by the physician based at the hospital. Once the patient's cardiovascular system is stabilized, he is then transferred to the hospital of his choice via Heartmobile. (Figure 2). If the patient is suspected of having a heart attack, he is brought directly to the Coronary Care Unit bypassing the Emergency Room, thereby avoiding any unnecessary delays. Studies done at Ohio State University have shown that 18% of all heart attack

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victims die in the Emergency Room before they get to the Coronary Care Unit.

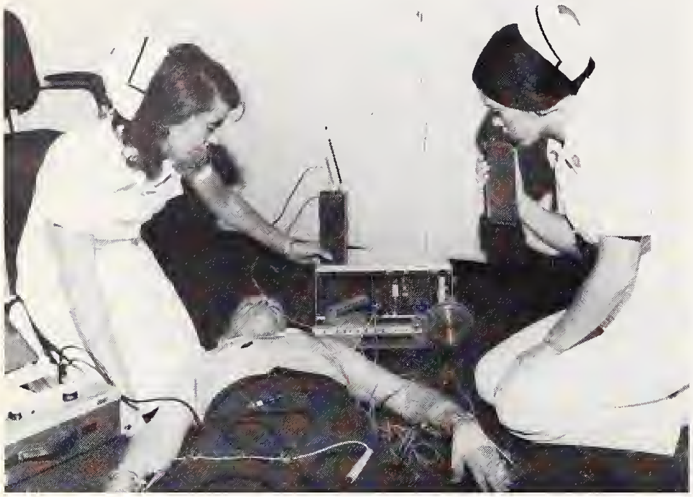

Figure 1
Heartmobile team telemetering vital data to hospital.

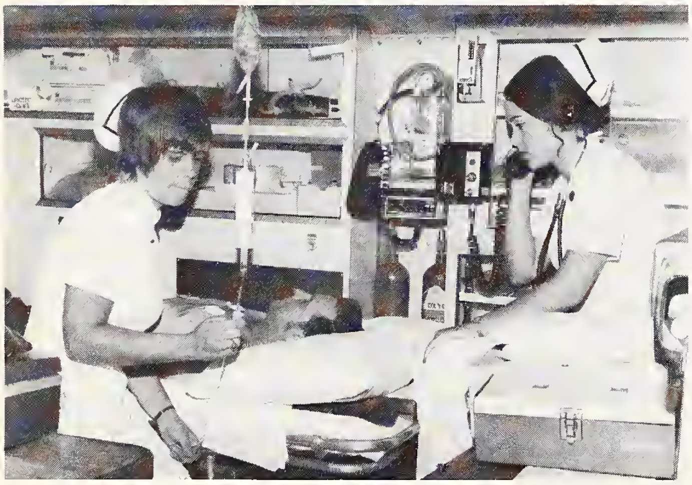

Figure 2
Heartmobile enroute to hospital.

Results

The Heartmobile service averages approximately two calls a day and this report deals with an analysis of the first 550 cases. Approximately 58% of the calls were for suspected acute cardiovascular disease, whereas 38% were for other assorted acute illnesses. Less than 5% of the cases were for non-emergencies.

Calls for the Unit were distributed fairly evenly throughout the week. However, of all the patients later proven to have acute myocardial infarction, a significant number (22%) occurred on Saturday. (Figure 3). We would not explain the reason for this, except that the victim is more likely to be with members of his family, who may be more motivated to call for help.

The calls for the Heartmobile came in relatively uniformally throughout the daytime. However, there was a marked decrease in calls between midnight and 8 a.m. (Figure 4). This suggests that people may wait until the morning to call the Heartmobile or else use some other type of transportation at night. In thirty percent of the cases, the Heartmobile team spent less than 30 minutes away from the hospital and 98% of the runs were completed within an hour. The time spent away from the hospital by the nurses did not necessitate additional staffing. The average Heartmobile run took approximately 35 minutes. Nearly three-quarters of the calls were in the city of Waterbury, and again three-quarters of these were to the victim's home. Only 6% of the calls were to places of work, again pointing out that people at home with their families were more likely to use the facilities of the Heartmobile.

DISTRIBUTION OF CALLS BY DAY OF WEEK.

Day of Week	*Mon.*	*Tue.*	*Wed.*	*Thu.*	*Fri.*	*Sat.*	*Sun.*
Total Calls	15%	12%	16%	14%	17%	12%	14%
Victims of acute myocardial infarction	15%	11%	11%	12%	16%	22%	13%

Figure 3

DISTRIBUTION OF CALLS BY TIME OF DAY.

Time of Dispatch	*Midnight - 6 AM*	*6 AM - 8 AM-*	*8 AM Noon-*	*Noon 4 PM-*	*4 PM 8 PM*	*8 PM - Midnight*
Total Calls	16%	7%	21%	18%	19%	19%
Victims of acute myocardial infarction	12%	10%	22%	21%	17%	18%

Figure 4

Over half of the acute myocardial infarction patients admitted to the hospital alive had called the Heartmobile within 60 minutes of the onset of symptoms. (Figure 5). This is substantially less than the average patient delay time of one hour and 47 minutes reported by Fulton *et al.*[1] In 84% of the acute myocardial infarction cases, the Heartmobile had arrived at the site of the call and begun preparations for treatment within 10 minutes of receipt of the call for help. Studies from Edinborough and Belfast show that approximately 50% of people who die from a myocardial infarction die within the first two hours of the onset of symptoms.[1] Therefore, the Heartmobile reaches a

TIME FROM ONSET OF SYMPTOMS UNTIL CALL FOR HEARTMOBILE.

Time Interval	*Acute Myocardial Infarction*	*No Myocardial Infarction*
Less than 30 minutes	26%	42%
30-60 minutes	26%	15%
1-5 hours	31%	26%
More than 5 hours	17%	17%

Figure 5

large number of heart attack victims during their most critical period.

More than half of the patients brought in by the Heartmobile were under 65 years of age. (Figure 6). Fifty-nine percent of all patients were male and 57% with acute myocardial infarctions were male. Sixty-nine percent of those patients dead on arrival were male, a rate much higher than expected from the male-female ratio. These are consistent with studies showing a much higher incidence of sudden cardiac deaths and acute myocardial infarction in the male population.[5] The victims were found to have died before the arrival of the ambulance in 6% of runs and an additional two percent died before reaching the hospital.

AGE DISTRIBUTION OF HEARTMOBILE CALLS.

		DIAGNOSIS		
Age	*Acute MI*	*Coronary Insufficiency or Angina*	*Other*	*Total Calls*
1 - 30 years	0%	0%	4%	3%
31 - 50 years	3%	8%	20%	15%
51 - 65 years	45%	27%	33%	35%
Over 65 years	52%	65%	43%	47%

Figure 6

In almost all cases (93%) the Heartmobile team rendered some form of treatment. In 80% of the runs, this included oxygen and IV fluids. Xylocaine was administered to 9% of the patients; 38% received Demerol; 7% of the patients required defibrillation, and in 10% of the runs, the Heartmobile team rendered external cardiac massage and assisted respiration.

A review of the presenting complaints of patients with acute myocardial infarctions showed that three-quarters of the patients called the Heartmobile because of chest pain, 10% because of loss of consciousness, and 10% because of shortness of breath without accompanying chest pain. Of those patients with no heart disease, 50% called the vehicle complaining of chest pain, 11% complaining of loss of consciousness, and 21% complaining of shortness of breath.

In reviewing the various rhythm disturbances observed by the Heartmobile team, it is noted that in patients with acute myocardial infarctions, 15% had bradyarrhythmias and 39% tachyarrhythmias, whereas only five percent of the patients without a myocardial infarction had bradyarrhythmias, and nearly half had tachyarrhythmias. (Figure 7). Premature ventricular contractions occurred in approximately one-fifth of the cases, both in acute myocardial infarction patients and those without myocardial infarction.

INITIAL ELECTROCARDIOGRAPHIC RHYTHMS.

Arrythmias	*Acute Myocardial Infarction*	*No Myocardial Infarction*
Bradyarrythmias	15%	5%
Tachyarrhythmias	39%	47%
Premature ventricular contractions	22%	19%

Figure 7

In conclusion, the, Mobile Coronary Care Unit at St. Mary's Hospital in Waterbury, Connecticut, is employed at a constant, though low rate, throughout the week. There is a marked increase on Saturdays of calls for victims with acute myocardial infarctions. There is a higher proportion of males that utilize the service, and a higher proportion of males have been shown ultimately to have acute myocardial infarction and sudden cardiac death. The majority of the Heartmobile runs were for patients with acute cardiac problems, and most of these were for acute myocardial infarction. However, various other acute problems were encountered, including acute respiratory failure, electrocution, trauma, burns, stroke, and diabetes. The institution of the Coronary Care Ambulance has been correlated with a decrease in the delay time before a heart attack victim decides to call for help. Thus such victims have available to them trained personnel and specialized equipment during the time period when fatal arrhythmias are most likely to occur. Evidence from other communities with Mobile Coronary Care Units similar to St. Mary's have demonstrated a significant reduction in both electrical and pump death from acute myocardial infarction.[6 7]

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Professional Liability: AMA'S Top Priority

1. Professional liability persists as No. 1 priority with new round of rate increases,
2. Ultimate solution: tort reforms thru remedial legislation, immediate goal: assure availability of coverage.
3. AMA urges state, but not federal, legislative action.
4. AMA-developed model laws already helpful to 18 states. Recommendations include (a) establishing risk pools (b) changing statutes of limitations (c) defining informed consent (d) system for measuring damages (e) ceiling on damages.
5. Special AMA task forces have visited 15 states.
6. AMA joined AHA in holding national workshop July 28; has member on ABA study commission; working closely with AIA and NAIC.
7. Several MD-owned insurance companies formed—N.Y., Md., Calif. AMA will offer reinsurance if minimum of 20,000 MDs in 5 states participate and generate premiums of $12 million. (A-75 action)

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Yale-New Haven Hospital Spina Bifida Center: Introduction of the Pediatric Nurse Practitioner in a Program of Comprehensive Management

Joan L. Venes, M.D. and Beckett Rodgers

The Spina Bifida Center at the Yale-New Haven Hospital is in its third year of providing comprehensive care to children afflicted with the multiple handicaps associated with this disorder. It has been developed as an alternative to the traditional method of care for these children which has centered on long-term admissions to hospitals organized to provide both extensive medical treatment and rehabilitation. Schooling, in many instances, has been provided either in the hospital or, for those living at home, in special classes in which competition is limited to other handicapped children. The clinic at the Yale-New Haven Hospital offers a program of care oriented toward maintaining the child in his home and integrating him into a regular classroom setting. Providing neurosurgical, orthopedic and urological consultations during one clinic visit has long been recognized as the most efficient way of managing the complex problems of the multiply handicapped child. The introduction of the pediatric nurse practitioner in the role of clinic coordinator has broadened the scope of this comprehensive approach.

The newborn and his family are generally referred to the clinic while the infant is still a patient in the Newborn Special Care Unit. This early referral gives the nurse practitioner and the social worker the opportunity to assist parents in coping with the new and unexpected complex problems which suddenly confront them. Older children are referred by pediatricians, rehabilitation agencies and, not infrequently, by other clinic families. Almost all children with spina bifida treated by either the Department of Neurosurgery or Orthopedics at the Yale-New Haven Hospital are followed in this clinic.

The newborn with myelomeningocele and hydrocephalus often requires specialized care after returning home. The nurse practitioner, facilitating the adaptation process, visits the home and assists the mother with the prescribed exercise program and Crede regimen as indicated. Equally important, she provides encouragement and reassurance and is able to evaluate the home situation in terms of the needs of both the infant and his family. In those instances in which family stability is threatened by psychological and financial stresses inherent in the birth of the child with a severe handicap, the pediatric nurse practitioner is able to enlist the services of the clinic social worker. The pediatric social worker's post-graduate education equips her to deal with the problems of the child with chronic illness and the family's response to that illness, or to refer them to the appropriate agency.

As the child grows older the problems become more varied. Recurring urinary tract infections may present a formidable problem leading to progressive kidney dysfunction. The pediatric nurse practitioner obtains a clean catch specimen at every clinic visit and, in cooperation with the urologist, implements the appropriate antibiotic program. At times, symptomatic urinary tract infections may be treated at home after an initial evaluation by the urologist. The pediatric nurse practitioner may be called upon to instruct the mother in the technique of intramuscular injection and follows up such instruction with a home visit. Such a program has enabled us to keep a number of children at home who otherwise would be hospitalized solely because of the need for twice daily injections. Recently a program of intermittent catheterization was instituted as a means of achieving social continence, and the ability of the nurse practitioner to work with the mother assures compliance with this form of therapy. Continence has often been the limiting factor preventing the child from participating in a regular classroom. In the past two years, twenty of twenty-three previously incontinent school-aged children have achieved a degree of bowel control which allows them to join their classmates without the fear of an embarrassing "accident." Such results can only be obtained by close, intensive follow-up and are a tribute to the effectiveness of the nurse practitioner in implementing home treatment programs.

The orthopedic management of a child with myelomeningocele involves an orthopedist, a physiotherapist, a bracemaker, and a rehabilitation agency. The pediatric nurse practitioner helps the surgeon explain any needed procedures to the parents and the child, helps the family with specialized care that might be needed when the child returns home and, in special instances, works with the school to allow the early return of the child to his ordinary environment.

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In addition to these activities which combine delivery of health care and education of the family and the school, the pediatric nurse practitioner is also responsible for the administration of the clinic. This involves the coordination of appointments, the preparation of detailed reports of each clinic visit (which are then forwarded to the referring physician, the involved rehabilitation agency and the clinic consultants), the monitoring of blood counts and urine cultures and the teaching of student nurse practitioners.

The team conference which follows every clinic allows the pediatric nurse practitioner, the orthopedist, the neurosurgeon, the physiotherapist and social worker to discuss each child in depth and encourages a truly comprehensive management philosophy.

In summary, the Spina Bifida Center utilizes the services of a nurse practitioner to broaden the meaning of comprehensive care to include an outreach into the home, school and community. Such a family oriented program allows us to manage these children without resorting to prolonged hospitalization in specialized facilities. Above all, we strive to concentrate on the fact that these are children who happen to be handicapped, not handicapped children.

Month in Washington

continued from page 791

Cost of the bill was put at $7 billion yearly.

The Administration held off submission of an NHI plan this year, but is almost sure to offer a plan next year similar to the Administration's old CHIP bill. The other major NHI recommendations before Congress include the American Medical Association's Comprehensive Health Care Insurance Act, Labor's bill, the American Hospital Association's plan, and the Health Insurance companies' NHI proposal.

Under the Long bill:

*All people would be covered by a catastrophic protection provision that would pay for everything above the cost of 60 days in a hospital or $2,000 in expenses.

*A uniform national benefit and eligibility structure with heavier federal contributions that would reshape the present Medicaid program and broaden it to include the "working poor."

*Private health insurance carriers would have to meet government standards to quality for participation in the catastrophic and other federal health programs.

The catastrophic insurance could be provided by either the government through a one percent payroll tax or through employers' own insurance plans in which case employers could receive a 50 percent tax rebate. A separate Social Security trust fund would finance this provision.

* * *

Private health insurance organizations do a better and cheaper job of handling Medicare bills than the Social Security Administration, according to a General Accounting Office (GAO) report.

High federal pay and administrative inefficiencies were blamed for Social Security's poor showing in comparison with private organizations.

The report was sent to the House Ways and Means Committee which requested it last year. The Ways and Means Health Subcommittee will open Autumn legislative hearings soon on National Health Insurance. A major issue is whether a Social Security-financed catastrophic program should be part of NHI.

The GAO is an agency of Congress that investigates the activities of the Federal Government as a function of Congress' oversight role.

GAO compared the SSA's Bureau of Health Insurance performance and cost for 1973 with that of four contract intermediaries—Mutual of Omaha, Travelers, the Maryland Blue Cross Plan, and Hospital Service Corporation (the Chicago Blue Cross Plan).

The GAO report found that the average cost, excluding audit, of a bill processed by SSA was $12.39 compared to $7.31 for Travelers, $7.28 for Mutual, $3.81 for Chicago, and $3.55 for Maryland.

Social Security and intermediaries like Travelers and Mutual serve providers in a number of states, thus requiring field offices, and serve a higher percentage of skilled-nursing facilities, whose bills are considered more difficult to process than hospital bills, GAO said. "Such intermediaries can be expected to have higher costs than Blue Cross Plans, which primarily serve hospitals in only one state or part of a state," the report said.

GAO said it believes the Committee should allow HEW to redesignate an intermediary "when because of geographic dispersion, the provider's selection appears to inhibit efficient administration."

The report said Social Security's Administrative costs "substantially exceed the costs of Mutual and Travelers. Higher salaries and lower productivity appear to be major reasons for the higher costs of the division, which, unlike the private intermediaries, had no production standards."

Advocacy and Corruption in the Healing Professions

Robert Jay Lifton, M.D.

In looking at the professions one does well, I think, to hold to the old religious distinction between the ministerial and the prophetic. One should not assume, as many do, a simple polarity in which the sciences are inherently radical or revolutionary and the healing professions intrinsically conservative. The professions must minister to people, take care of them, and that is a relatively conservative process. But there are prophets who emerge from the healing ministrations of the professions—Freud is a notable example—with radical critiques and revolutionary messages. Moreover, even "pure scientists" (in biology or physics, for example) spend most of their time ministering to the existing paradigm, doing what Thomas Kuhn calls "normal science,"[1] and strongly resist the breakthrough that is inevitably charted by the prophets among them. There are ministerial and prophetic elements in both the healing professions and the sciences.

But one must also distinguish between the professions, which have profound value in their capacity for continuity and renewal, and professional*ism,* the ideology of professional omniscience, which in our era inevitably leads to technicism and the model of the machine. The necessity for such a distinction becomes painfully clear if one looks at the situation that prevailed for psychiatrists in Vietnam. I want to take that situation as a starting point for a broader discussion of these dilemmas and their moral and conceptual ramifications. For the fact is that, in such extreme situations, the professional may be no better able than his soldier-patient to sort out the nuances of care and professional commitment on the one hand, and moral (or immoral) action on the other.

Central to my view of the present predicament of the professions is the psychology and the spirit of the survivor. The concept of the survivor derives in my work from the study I did in Hiroshima a little more than ten years ago,[2] and has been fundamental to my subsequent thought. I define a survivor as one who has touched, witnessed, encountered or been immersed in death in a literal or symbolic way and has himself remained alive. Let us assume that we as professionals share the national 'death immersion' of not only Vietnam but the related Watergate-impeachment process and that our ways of surviving them can have significance for us in our work. We may then discover that we are not entirely removed from the constellation of psychological patterns that I found Hiroshima survivors to share to a rather striking degree with survivors of Nazi death camps, the plagues of the Middle Ages, natural disasters, and what Kurt Vonnegut calls "plain old death."

I

The concept of the survivor includes five patterns. The first is the survivor's indelible death image and death anxiety. This "death imprint" often has to do with a loss of a sense of invulnerability. The second pattern, that of death guilt, is revealed in the survivor's classic question, "Why did I stay alive when he or she or they died?" The question itself has to do with a sense of organic social balance: "If I had died, he or she would have lived." That image of exchange of one life for another is perhaps the survivor's greatest psychological burden. A third pattern is that of desensitization or what I call psychic numbing, the breakdown of symbolic connectedness with one's environment. Numbing is a necessary protective mechanism in holocaust, but can become self-perpetrating and express itself in sustained depression, despair, and apathy or withdrawal. A fourth survivor pattern has to do with the 'death-taint,' as experienced by others toward survivors and by survivors themselves, resulting in discrimination against them and mutual suspicion and distrust. Central to this pattern is the survivor's "suspicion of counterfeit nurturance," his combination of feeling in need of help and resenting help offered as a reminder of weakness. (This kind of suspicion occurs not only in holocaust but in any situation in which 'help' is offered by the privileged to the downtrodden or oppressed, as in white-black relations; and one can readily find models for this pained interaction in parent-child relationships.)

The fifth pattern is fundamental to all survivor psychology and encompasses the other four. It is the struggle toward 'formulation' (following Susanne Langer)[3] toward form and significance—in order to be able to find form and significance in one's remaining life experience. This formulative struggle is equally visible in more symbolic experiences of holocaust, those of surviving ways of life one perceives to be 'dying.' In that sense rapid social change makes survivors of us all.

In examining our healing professions in relationship to these survivals, especially that of the psychiatric

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death encounter in Vietnam, we should keep in mind two general survivor alternatives. One can retreat from the issues raised by the death immersion and thereby remain bound to it in a condition of stasis (or numbing). Or one can confront the death immersion and derive insight, illumination, and change from the overall survivor experience.[4] The latter response to some kind of experience of survival has probably been the source of most great religious and political movements, and of many breakthroughs in professional life as well.

A related issue is that of advocacy, which in our profession applies to both investigation and therapy, and is crucial to issues of professional renewal. I came to my work with Vietnam veterans from two directions, from prior antiwar advocacy and from professional concern with holocaust deriving from my research in Hiroshima. In the work with veterans I sought to combine detachment sufficient to enable me to make psychological evaluations (which I had to do at every step) with involvement that expressed my own commitments and moral passions. I believe that we always function within this dialectic between ethical involvement and intellectual rigor, and that bringing our advocacy 'out front,' and articulating it makes us more, rather than less, scientific. Indeed, our scientific accuracy is likely to suffer when we hide our ethical beliefs behind the claim of neutrality and see ourselves as nothing but "neutral screens." The Vietnam War constitutes an extreme situation, in which the need for an ethical response is very clear. But we have a tradition of great importance in depth psychology, much evident in Freud, of studying extremes in order to illuminate the (more obscure) ordinary.

II

I want to focus now on my experience over the last three years with "rap groups" of anti-war veterans and then to generalize from that experience about professional issues around advocacy and corruption.

The veterans' rap groups came into being because the veterans sensed that they had more psychological work to do in connection with the war.[5] It is important to emphasize that the veterans themselves initiated the groups. The men knew that they were "hurting," but did not want to seek help from the Veterans Administration, which they associated with the military, the target of much of their rage. And though they knew they were in psychological pain, they did not consider themselves patients. They wanted to understand what they had been through, begin to heal themselves, and at the same time make known to the American public the human costs of the war. These two aspects of the veterans' aspirations in forming the groups—healing themselves while finding a mode of political expression—paralleled the professional dialectic of rigor and advocacy mentioned earlier. Without using those words, the veterans had that combination very much in mind when they asked me to work with them.

I called in other professionals (Chaim Shatan did much of the organizing) in the New York-New Haven area to assist us in the rap groups. I also participated with the veterans in the Winter Soldier Investigation of 1971, the first large-scale public hearing at which American GIs described their own involvement in war crimes. From the beginning the therapeutic and political aspects of our work developed simultaneously. It seemed natural for us to initiate the rap groups on the veterans' own turf, so-to-speak, in the office of the Vietnam Veterans Against the War—and to move to the 'neutral ground' of a theological seminary when problems of space and political in-fighting developed at the VVAW office. The men wanted to meet where they were comfortable and where they could set the tone. With many stops and starts and much fluidity in general, a sizable number of these rap groups have formed, in New York City and throughout the country.[6] The one that I have been part of has been meeting continuously for three and one-half years as of this writing (June 1974).

We made plans for weekly two-hour meetings, but the sessions were so intense, with such active involvement on the part of everybody, that they would generally run for three or four hours. I also interviewed many of the men individually in connection with the research I initiated then and subsequently published. From the beginning we avoided a medical model: we called ourselves "professionals" rather than "therapists" (the veterans often referred to us simply as "skrinks"), and we spoke of rap groups rather than group therapy. We were all on a first-name basis, and there was a fluidity in the boundaries between professionals and veterans. But the boundaries remained important nonetheless; distinctions remained important to both groups; and in the end the healing role of professionals was enhanced by the extent to which veterans could become healers to one another and, in some degree, to professionals also. Equally important, there was an assumption, at first unspoken and later articulated, that everybody's life was at issue; professionals had no special podium from which to avoid self-examination. We too could be challenged, questioned about anything—all of which seemed natural enough to the veterans but was a bit more problematic for the professionals. As people used to interpreting others' motivations, it was at first a bit jarring to be confronted with hard questions about our own, and with challenges about the way we lived. Not only was our willingness to share this kind of involvement crucial to the progress of the group, but in the end many of us among the professionals came to value and enjoy this kind of dialogue.

As in certain parallel experiments taking place, not only in psychological work but throughout American culture, we had a clearer idea of what we opposed (hierarchical distancing, medical mystification, psychological reductionism that undermines political and ethical ideas) than of what we favored as specific guidelines. But before long I came to recognize three principles that seemed important. The first was that of *affinity,* the coming together of people who share a particular (in this case overwhelming) historical or personal experience, along with a basic perspective on that experience, in order to make some sense of it (the professionals entered into this "affinity," at least to a certain extent, by dint of their political-ethical sympathies and inclination to act and experiment on behalf of them). The second principle was that of *presence,* a kind of being-there or full engagement and openness to mutual impact—no one ever being simply a therapist against whom things are rebounding. The third was that of *self-generation,* the need on the part of those seeking help, change, or insight of any kind, to initiate their own process and conduct it largely on their own terms so that, even when calling in others with expert knowledge, they retain major responsibility for the shape and direction of the enterprise. Affinity, presence, and self-generation seem to be necessary ingredients for making a transition between old and new images and values, particularly when these relate to ultimate concerns, to shifting modes of historical continuity or what I have elsewhere called symbolic immortality.[7]

I do not want to give the impression that everything went smoothly. There were a number of tensions in the group, one of them having to do with its degree of openness and fluidity. Openness was an organizing principle; in the fashion of "street-corner psychiatry," any Vietnam veteran was welcomed to join a group at any time. Fluidity was dictated by the life-styles of many of the veterans, who traveled extensively around the country and did not hold regular jobs. Professionals too were unable to attend every session. We established a policy of assigning three professionals to a group, with arrangements that at least one come to each meeting—but professionals became so involved in the process that there were usually two or all three present at a given group meeting.

When a veteran would appear at the group for the first time, obviously ill at ease, he would be welcomed by the others with a phrase, "You're our brother." Still, everyone came to recognize that such a policy could interfere with the probing of deep personal difficulties. A similar issue developed around the question of how accessible we would be to the media. Veterans wanted to make known the human costs of the war as part of their anti-war commitment, but after permitting a sympathetic journalist to sit in on a few of the sessions they came to recognize that group process could be interfered with by the presence of even a sensitive outsider. We eventually arrived at the policy that only veterans and professionals could be present during group sessions, but that the group could on occasion meet with interested media people after a session was over. That solution served to protect the integrity of the group while conveying to those journalists a rather vivid sense of both the impact of the war and the nature of the rap group experience.

There was also a tension among the professionals between two views of what we were doing. In the beginning a majority of the professionals felt that the essential model for our group sessions was group therapy. These professionals argued that the men were 'hurting' and needed help and that if we as therapists offered anything less than group therapy we were cheating the men of what they most needed. I held to a second model which was at first a minority view. This position, while acknowledging the important therapeutic element of what we were doing, emphasized the experimental nature of our work in creating a new institution; a sustained dialogue between professionals and veterans based on a common stance of opposition to the war in which both drew upon their special knowledge, experience and needs. This model did not abolish role definitions: veterans were essentially there to be helped and professionals to help; but it placed more stress on mutuality and shared commitment.

We never totally resolved the tension between these two models in the sense of all of us coming to share a single position. The veterans tended to favor the second model but did not want to be short-changed in terms of help they wanted and needed. There was a continuing dialectic between these two ways of seeing what we were doing. But those who held to the second model—which related to other experiments taking place in American society with which the veterans identified—tended to stay longer with the project. Those professionals who conceived the effort in a more narrowly defined therapeutic way, and who I suspect were less politically and ethically committed to an anti-war position, tended to leave.

Of course there were differences in professional style even within these two models. Some professionals were particularly skilled at uncovering the childhood origins of conflicts. I was seen as an authority on issues of death and life-continuity and on social-historical dimensions around death and survival. As a personal style, my impulse was to be something of a mediator and the group soon came to see me in that way. The group recognized and accepted differing personal styles and it was interesting to us as professionals to observe reflections of ourselves in the responses to us not only of veterans but of other professionals sharing the experience of a particular group. The veterans began with almost no knowledge of group process but they learned quickly. The focus of the group was from the beginning on the overwhelming experience of the war and on residual guilt and rage. In the process of examining these issues the men looked increasingly at their on-going life struggles, especially their relationships with women, feelings about masculinity, and conflicts around work. There was a back-and-forth rhythm in the group between immediate life situations and war-related issues, with these gradually blending in deepening self-examination that was generally associated in turn with social and political forces in the society.

For all of us in the group there was a sense that the combination of ultimate questions (around death and survival) and experimental arrangements required that we call upon new aspects of ourselves and become something more than we had been before. Central to this process was the changing relationship between veterans and professionals. At moments the veterans could become critical of the way professionals were functioning. There was one bitter expression of resentment by a veteran who felt that the interpretations made by a professional were too conventional and tended to ignore or undercut issues very important to him. The group discussed the matter at great length. I agreed in part with the veteran, but also tried to point out that the interpretation was made in good faith. At another point one of the veterans spoke very angrily to me because I was occupied with my note-taking. I was trying to record the words of the veterans precisely because, as we had discussed earlier, I was in the group not only as a healer but also as an investigator who would write about the experience. When we discussed the matter it became clear that the veterans had no difficulty accepting that dual role. What they objected to was my not being fully 'present' with them as I focused on taking notes. I thought about that and decided they were right. I ceased my note-taking and from that point on made notes only at the end of each session, a well-established pattern in the practice of psychotherapy that I had to relearn. There were, of course, many other conflicts as well, but there was also an essential feeling of moving toward authentic insight. By taking seriously such issues as they were raised, we maintained a double level of individual-psychological interpretation and shared actuality. Taking that actuality seriously contributed to the sense of everyone's 'presence.'

One additional experience, not frequently encountered in healing endeavors, is worth mentioning. About six months after we initiated the groups a non-white veteran—we were not certain whether he was American Indian or Puerto Rican—came to a session and spoke rather movingly about his struggles to sustain himself and a baby left with him by a girlfriend who deserted him. He came to a second meeting but fled after just five minutes. We wondered at his behavior, and some weeks later discovered an explanation for it. Though he did not again appear in the group, he came to the VVAW office and confessed to another veteran that he had been an FBI informer. He stayed only long enough to say that he was sorry for what he had done and felt especially badly because he had liked the rap group very much. When we discussed all this in the group, reactions varied from wondering what arcane matters the FBI might have imagined we were discussing (though we concluded that he had probably been simply sent to the VVAW office and had somehow wandered into our session), to the re-kindling of bitter resentment at official America, to an uneasy sense that betrayal from within—by veterans themselves (and by inference, by oneself)—was all too evident a possibility.

III

The rap groups represented a struggle on the part of both veterans and psychological professionals to give form to what was in many ways a common survival, a survival for the veterans of a terrible death immersion and for the professionals of their own dislocations in relationship to the war and the society. During our most honest moments, we professionals have admitted that the experience has been as important for our souls as for theirs. For the rap groups have been one small expression (throughout the country they and related programs have probably involved, at most, a few thousand people) of a much larger cultural struggle toward creating what I have termed animating institutions.[8] Whether these emerge from existing institutions significantly modified or as "alternative institutions," they can serve the important function of providing new ways of being a professional as well as relating to professionals. While such institutions clearly have 'radical' possibilities, they can also serve a genuinely conservative function in enabling those involved to find a means of continuing to relate, however critically, to the existing society and its other institutions, as opposed to retreating in embittered alienation, destructiveness, or self-destructiveness. In this and other ways the rap group experience seemed to me a mirror on psychohistorical struggles of considerable importance throughout the society.

A compelling example was the rap group's continuous preoccupation with struggles around maleness. I described these struggles in a chapter of my book entitled, somewhat whimsically but not without seriousness, "From John Wayne to Country Joe and the Fish." The men were very intent upon examining what they came to call "the John Wayne thing" in themselves—a process actively encouraged if not required by girlfriends and wives often active in the women's movement. The essence of the issue for the veterans was their deepening realization that various expressions of super-maleness encouraged in American culture were inseparable from their own relationship to war-making. They probed unsparingly the sources and fears beneath their male bravado in enthusiastically (in many cases) 'joining up' and even seeking out the war. For the insight that gradually imposed itself on them was that only by extricating themselves from elements of "the John Wayne thing"—notably its easy violence on behalf of unquestioned group loyalty, and male mystique of unlimited physical prowess always available for demonstration—could they, in a genuine psychological sense, extricate themselves from the war. Two significant psychological alternatives were available to them from the youth culture of the 1960s: the image of a male being no less genuinely so for manifesting tenderness, softness, aesthetic sensitivity, and awareness of feelings; and the overall social critique of war, war-making, and the warrior ethos. It was particularly the latter that Country Joe MacDonald and his rock group (Country Joe and the Fish) gave ecstatic expression to in their celebrated song, "I Feel Like I'm Fixin' to Die Rag." A frenzied and bitter evocation of the absurdity of dying in Vietnam, the song propels one to the far reaches of the grotesque: "And its 1, 2, 3, what are we fighting for?/Don't ask me I don't give a damn . . . Well there ain't no time to wonder why/Whoopee we're all gonna die." And a little later in the song: "Well come on mothers throughout the land/Pack your boys off to Vietnam/Be the first one on your block/To have your boy come hime in a box." Ironically and significantly, the "Fixin' to Die Rag" was probably the most frequently played song by men serving in Vietnam, and it is very likely that this expression of the utter absurdity and grotesqueness of dying in Vietnam will become *the* song of the Vietnam War.

The personal transformation the veterans experience (barely suggested here) can thus be seen to have had both introspective and extrospective elements. The men constantly look inward, but they also look outward at their society both in relationship to having been drawn into the war and to what they perceived as a dubious welcome upon their return. This extrospective aspect of personal change is always important—not only in experimental institutions like the rap groups but in ordinary psychotherapy and ordinary living—but is often denied or ignored because of the implicit assumption that psychological experience, being internal, is totally self-contained. It was precisely this dual vision that enabled many veterans to develop what I came to see as an animating relationship to their sense of guilt.[9] In contrast to static (neurotic) forms of guilt and immobilizing self-condemnation, animating guilt can provide energy toward change via the capacity to examine the roots of that guilt in both social and individual terms. I believe that these distinctions around guilt, when pursued further, have significance both for depth-psychological theory and for the ethical questions at issue in this discussion.[10]

IV

Guilt and rage were fundamental emotions that we explored constantly in the groups. But the men had a special kind of anger best described as ironic rage toward two types of professionals with whom they came into contact in Vietnam, chaplains and "shrinks." They talked about chaplains with great anger and resentment as having blessed the troops, their mission, their guns and their killing: "Whatever we were doing—murder, atrocities—God was always on our side." Catholic veterans spoke of having confessed to meaningless transgressions ("Sure, I'm smoking dope again. I guess I blew my state of grace again") while never being held accountable for the ultimate one ("But I didn't say anything about killing"). It was as if the chaplains were saying to them, "Stay within our moral cliches as a way of draining off excess guilt, and then feel free to plunge into the business at hand."

The men also pointed to the chaplain's even more direct role of promoting false witness. One man spoke especially bitterly of "chaplains' bullshit." He illustrated what he meant by recalling the death of a close buddy—probably the most overwhelming experience one can have in combat—followed by a combined funeral ceremony-pep talk at which the chaplain urged the men to "kill more of them." Another who had carried the corpse of his closest buddy on his back after his company had been annihilated described a similar ceremony at which the chaplain spoke of "the noble sacrifice for the sake of their country" made by the dead. It is not generally recognized that the My Lai massacre occurred immediately after the grotesque death from an exploding "booby trap" of a fatherly, much-revered noncommissioned officer, which had been witnessed by many of the men. That ceremony was conducted jointly by a chaplain and the commanding officer, the former blending spiritual legitimacy to the latter's mixture of eulogy and exhortation to "kill everything in the village." A eulogy in any funeral service asks those in attendance to carry forward the work of the dead person. In war, that "work" characteristically consists of getting back at the enemy, thereby providing men with a means of resolving survivor guilt, and a 'survivor mission' involving a sense not only of revenge but of carrying forth the task the fallen comrade could not see to completion. In Vietnam, the combination of a hostile environment and the absence of an identifiable "enemy," led to the frequent manipulation of grief to generate a form of false witness, a survivor mission of atrocity.[11]

The men spoke with the same bitterness about "shrinks" they had encountered in Vietnam. They described situations in which they or others experienced an overwhelming combination of psychological conflict and moral revulsion, difficult to distinguish in Vietnam. Whether one then got to see a chaplain, psychiatrist or an enlisted-man assistant of either, had to do with where they were at the time, who was available, and the attitudes of the soldier and the authorities in his unit toward religion and psychiatry. But should he succeed in seeing a psychiatrist he was likely to be "helped" to remain at duty and (in many cases) to carry on with the daily commission of war crimes, which was what the ordinary GI was too often doing in Vietnam. Psychiatry for these men served to erode whatever capacity they retained for moral revulsion and animating guilt. They talked in the rap groups about ways in which psychiatry became inseparable from military authority.

But in their resentment of chaplains and psychiatrists the men were saying something more. It was one thing to be ordered by command into a situation they came to perceive as both absurd and evil, but it was quite another to have that process rationalized and justified by ultimate authorities of the spirit and mind—that is by chaplains and psychiatrists. One could even say that spiritual and psychological authority was employed to seal off in the men some inner alternative to the irreconcilable evil they were asked to embrace. In that sense the chaplains and psychiatrists formed an unholy alliance not only with the military command but also with the more corruptible elements in the soldier's psyche, corruptible elements available to all of us, whether soldier or chaplain or psychiatrist.

This "double agent" problem arises even in wars that are more psychologically defensible (such as World War II), where the alliance between spiritual-psychological authority (chaplains and shrinks) on the one hand, and the soldier's inner acceptance of killing on the other, is buttressed by at least a degree of belief in the authenticity (or necessity) of the overall enterprise. Even then, ethical-psychological conflict occurs in everyone concerned—there is the "Catch 22" described by Heller, according to which one's very sanity in seeking escape from the environment via a psychiatric judgment of craziness renders one eligible for the continuing madness of killing and dying. But in Vietnam, that alliance took on a grotesquery extraordinary even for war, as priest and healer, in the name of their spiritual-psychological function, undermined the last vestiges of humanity in those to whom they ministered.

We can then speak of the existence of a "counterfeit universe" in which pervasive, spiritually reinforced inner corruption becomes the price of survival. In this sense the chaplains and psychiatrists were just as entrapped as the GI's. For we may assume that most of them were reasonably conscientious and decent professionals—much like the writer and reader of this article—caught up in an institutional commitment in this particular war.

When the men spoke harshly in our group of military psychiatrists we professionals of course asked ourselves whether they were talking about us. In some degree they undoubtedly were. They were raising the question whether *any* encounter with a psychiatrist, even in a context which they themselves created, and into which we were called, could be any more authentic than the counterfeit moral universe psychiatrists had lent themselves to in Vietnam.

I want to move now to some reflections about psychiatry in more ordinary situations. The rap group experience raised questions about the extent to which everyday work in our profession, and the professions in general, tends to wash away rather than pursue fundamental struggles around integrity—the extent to which the special armor of professionals block free exchange between them and the people they intend to serve.

In the rap group experience I found the issue of investigative advocacy more pressing and powerful than in other research I have done.* This was partly because veterans and professionals alike were more or less in the middle of the problem—the war continued

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**In contrast, my Hiroshima work, in which I also experienced strong ethical involvement, was retrospective and in a sense prospective (there were immediate nuclear problems, of course, but we were not in the midst of nuclear holocaust); my study of Chinese thought reform dealt with matters of immediate importance but going on (in a cultural sense) far away; and my work with Japanese youth had much less to do with overwhelming threat and ethical crisis.*[12]

and we all had painful emotions about what it was doing, and what we were doing or not doing to combat it.

But I also came to realize that, apart from the war, the work had important bearing upon a sense of long-standing crisis affecting members of all the professions—a crisis the war in Vietnam both accentuated and illuminated but by no means created. We professionals, in other words, came to the rap groups with our own need for a transformation in many ways parallel to if more muted than that we sought to enhance in veterans. We too, sometimes with less awareness than they, were in the midst of struggles around living and working that had to do with intactness and wholeness, with what we have been calling integrity.

V

One source of perspective on that struggle, I found, was a return to the root ideas of profession, the idea of what it means to profess. Indeed, an examination of the evolution of these two words could provide something close to cultural history of the West. The Latin prefix "pro" means forward, toward the front, forth, out, or into a public position. "Fess" derives from the Latin *fateri* or *fass,* meaning to confess, own, acknowledge. To profess (or be professed) then, originally meant a personal form of out-front public acknowledgment. And that which was acknowledged or "confessed" always (until the sixteenth century) had to do with religion: with taking the vows of a religious order or declaring one's religious faith. But as society became secularized, the word came to mean "to make claim to have knowledge of an art or science" or "to declare oneself expert or proficient in" an enterprise of any kind. The noun form, "profession," came to suggest not only the act of professing, but also the ordering, collectivization, and transmission of the whole process. The sequence was from "profession" or religious conviction (from the twelfth century) to a particular order or "professed persons." such as monks or nuns (fourteenth century) to "the occupation which one possesses to be skilled in and follow," especially "the three learned professions of divinity, law, and medicine" along with the "military profession." So quickly did the connotations of specialization and application take hold that as early as 1605 Francis Bacon could complain: "Amongst so many great foundations of colleges in Europe, I find strange that they are all dedicated to professions, and none left free to Art and Sciences at large."[13]

Thus the poles of meaning around the image of profession shifted from the proclamation of personal dedication to transcendent principles to membership in and mastery of a specialized form of socially applicable knowledge and skill. In either case the profession is immortalizing—the one through the religious mode, the other through works and social-intellectual tradition. And the principles of public proclamation and personal discipline carry over from the one meaning to the other—the former taking the shape of examination and licensing, the latter of study, training, and dedication. Overall, the change was from advocacy based on faith to technique devoid of advocacy.*

To be sure, contemporary professions do contain general forms of advocacy: in law, of a body of supra-personal rules applicable to everyone; in medicine, of healing; and in psychiatry, of humane principles of psychological well-being and growth. But immediate issues of value-centered advocacy and choice (involving groups and causes served and consequences thereof) are mostly ignored. In breaking out of the pre-modern trap of immortalization by personal surrender to faith, the "professional" has fallen into the modern trap of pseudo-neutrality and covert immortalization of technique. As a result, our professions are all too ready to offer their techniques to anyone and anything. I am not advocating a return to pure faith as a replacement for the contemporary idea of what profession means. But I am suggesting that the notion of profession needs to include these issues of advocacy and ethical commitment. The psychiatrist in Vietnam, for example, whatever his intentions, found himself in collusion with the military in conveying to individual GIs an overall organizational message: "Do your indiscriminate killing with confidence that you will receive expert medical-psychological help if needed." Keeping in mind Camus' warning that men should become neither

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**One can observe this process in the modern separation of "profession" from "vocation." Vocation also has a religious origin in the sense of being "called by God" to a particular function or station." The secular equivalent became the idea of a personal "calling" in the sense of overwhelming inclination, commitment, and even destiny. But the Latin root of vocation, vocare, to call, includes among its meanings and derivatives: vocable, vocation, vouch; advocate, advocation, convoke, evoke, invoke, provoke, and revoke. Advocacy is thus built into the original root and continuing feel of the word vocation; and vocation in turn is increasingly less employed in connection with the work a man or woman does. If we do not say profession, we say "occupation," which implies seizing, holding, or simply filling in space in an area of in time; or else "job," a word of unclear origin that implies a task, activity, or assignment that is, by implication, self-limited or possibly part of a larger structure including many related jobs, but not, in essence, related to an immortalizing tradition or principle.*

victims nor executioners, this can be called—at least in Vietnam—the psychiatry of the executioner.[14] I do not exempt myself from this critique, as I served as a military psychiatrist in the Korean War under conditions that had at least some parallels to those we are discussing.

Three well-known principles of military psychiatry developed during recent wars are *immediacy* (a soldier is treated as soon as possible), *proximity* (close to the combat area), and *expectancy* (everyone under treatment is from the beginning made to expect that he will return to duty with his unit). There is a certain logic to this principles. Their use very often does eliminate or minimize the secondary gains from illness and the chronic symptomatology that would otherwise ensue when men are sent to the rear to undergo prolonged psychiatric hospitalization, as well as feelings of failure and unmanliness that become associated with eventual medical discharge from the military. One psychiatric report from Vietnam describes the use of these principles and the assumption that those requiring treatment "had run into some difficulty in interpersonal relations in their units that caused them to be extruded from these groups," so that "The therapeutic endeavor . . . was to facilitate the men's integration into their own groups (units) through integration into the group of ward patients."[15]

The approach seems convincing, until one evaluates some of the conditions under which atrocities occurred or were avoided. I spent ten years interviewing a man who had been at My Lai and had not fired nor even pretended he was firing. (Among the handful who did not fire most held their guns in position as if firing in order to avoid the resentment of the majority actively participating in the atrocity.) Part of what sustained this man and gave him the strength to risk ostracism was his very distance from the group. Always a 'loner,' he had as a child been raised by the ocean and engaged mainly in such solitary activities as boating and fishing. Hence, though an excellent soldier, he was less susceptible than others to group influence, and in fact remained sufficiently apart from other men in his company to be considered "maladapted" to that immediate group situation.[16] One must distinguish between group integration and personal integrity—the latter including moral and psychological elements that connect one to social and historical context beyond the immediate. Group integration can readily undermine integrity—in Vietnam for both the soldier and the psychiatrist who must grapple with his own struggles to adapt to a military institution with its goals of maximum combat strength, and to a combat situation of absurdity and evil. No wonder why, in Vietnam, he found little ethical space in which to move. The clear implication here is that the psychiatrist, no less than the combat soldier, is confronted with the important question of the group he is to serve and, above all, the nature and consequences of its immediate and long-range mission. To do that he must overcome the technicist assumption we fall into all too easily, namely: "Because I am a healer, anything I do, anywhere, is good." It may not be.

VI

I wonder how many colleagues shared my sense of chilling illumination in picking up the October, 1971 issue of *The American Journal of Psychiatry* and finding in it two articles by psychiatrists about Vietnam: one entitled "Organizational Consultation in a Combat Unit,"[17] and the other "Some Remarks on Slaughter."[18] The first, by Douglas R. Bey, Jr. and Walter E. Smith, lives up to its title in providing a military-managerial view of the psychiatrist's task. The authors invoke a scholarly and 'responsible' tone as they describe the three principles of combat psychiatry and trace their historical development. They then elaborate their own "workable method of organizational consultation developed and employed in a combat division in Vietnam." The method combines these principles of military psychiatry with "an organizational case study method" recently elaborated for industry at the Menninger Foundation, and, according to the authors, has bearing on possible developments in community psychiatry. Their professional voice sounds tempered, practical, and modest as they tell of their team approach (with trained corpsmen), of interviews with commanding officers, chaplains, and influential noncoms, and acknowledge that commanders "were far better prepared to work out solutions to their problems than we, since their area of expertise was in administration and fighting whereas ours was in the area of helping them to see where their feelings might be interfering with their use of these skills."

It was enough for psychiatric consultants to serve as an "observing ego" to the particular military unit. To back up that position they quote, appropriately enough, from an article by General W. C. Westmoreland recommending that the psychiatrist assume "a personnel management consultation type role." The title of that article by General Westmoreland—"Mental Health—An Aspect of Command"—makes quite clear just whom psychiatry in the military is expected to serve.

The authors' combination of easy optimism and concern for everyone's feelings and for the group as a whole, makes one almost forget the kinds of activities the members of that group were engaged in. Reading that lead article in the official journal of the national organization of American psychiatrists gave me a disturbing sense of how far this kind of managerial technicism could take a profession, and its reasonably decent individual practitioners, into ethical corruption. What is most significant about the article is that the authors never make mention of the slightest conflict—in themselves and their psychiatric team any more than the officers and men the team deals with—between group integration and personal integrity. Either they were too numbed to be aware of such conflict, or (more likely) they did not consider it worthy of mention in a scientific paper.

William Barry Gault's article, "Some Remarks on Slaughter," was a particularly welcome antidote, even if a bit more hidden in the inside pages. As his title make clear, Gault's tone is informed by an appropriate sense of outrage. Significantly, his vantage point was not Vietnam but Fort Knox, Kentucky, where he examined large numbers of men returning from combat. He was thus free of the requirement of integration with a combat unit, and we sense immediately a critical detachment from the atrocity-producing situation.

Gault introduces the idea of "the psychology of slaughter," combining the dictionary definition of that word ("the extensive, violent, bloody or wanton destruction of life; carnage") with a psychological emphasis upon the victim's defenselessness ("whether . . . a disarmed prisoner or an unarmed civilian"). He can "thus . . . distinguish slaughter from the mutual homicide of the actual combatants in military battle." He sets himself the interpretive task of explaining how "relatively normal men overcame and eventually neutralized their natural repugnance toward slaughter." He is rigorously professional as he ticks off six psychological themes or principles contributing to slaughter, and yet his ethical outrage is present in every word. His themes are: "The enemy is everywhere . . . (or) the universalization of the enemy"; "the enemy is not human . . . (or) the 'cartoonization' of the victim;" the "dilution" or "vertical dilution" of responsibility; the pressure to act;" "the natural dominance of the psychopath;" and "sheer firepower . . . (so that) terrified and furious teenagers by the tens of thousands have only to twitch their index finger, and what was a quiet village is suddenly a slaughterhouse."

Gault sensitively documents each of these themes in ways very consistent with experiences conveyed to me during rap groups and individual interviews. He ends his article with illustrative stories: of prisoners refusing to give information being thrown out of helicopters as examples to others; of a new combat commander who refused to shoot a twelve-year-old "dink" accidentally encountered by the company while setting up an ambush, and thereby deeply jeopardized himself with his own men, who in turn saw the whole company jeoparidized by the survival of someone who might, even as a prinoner, convey information about the ambush. Gault admits he does not know "why similar experiences provoke so much more guilt in one man than in another," and, still professionally cautious (perhaps overly so), remains "unwilling to attempt to draw any large lessons from my observations." At the end he insists only that "in Vietnam a number of fairly ordinary young men have been psychologically ready to engage in slaughter and that moreover this readiness is by no means imcomprehensible."

One senses that these stories made a profound impact upon him, that he became a survivor of Vietnam by proxy and that the article was his way of giving form to that survival as well as resolving his own integration-integrity conflict as a morally sensitive psychiatrist in the military at the time of the Vietnam War.* He was able to call forth his revulsion toward the slaughter (and, by implication, his advocacy of life-enhancing alternatives) as a stimulus to understanding and to bring to bear on the Vietnam War a valuable combination of professional insight and ethical awareness.

Nor do we have follow-up studies on psychiatrists and their spiritual-psychological state after service in Vietnam. I have talked to a number of them, and my impression is that they find it no easier to come to terms with their immersion in the counterfeit universe than does the average GI. They too feel themselves deeply compromised. They seem to require a year or more for them to begin to confront the inner contradictions they experienced. They too are survivors of Vietnam, and of a very special kind. I know of one or two who have embarked upon valuable survivor missions, parallel to and partly in affiliation with that of VVAW as an organization. But what is yet to emerge, though I hope it will before too long, is a detailed personal account by a psychiatrist of his struggles with group integration and individual integrity, and with the vast ramifications of the counterfeit that this paper only begins to suggest.

Put simply, American culture has so technicized the idea of psychiatric illness and cure that the psychiatrist or psychoanalyst is thrust into a stance of

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**This assumption that the article was an expression of Gault's own survivor formulation, which I made originally only on the basis of reading it (and, of course, on my experience, personal and professional, with the psychology of the survivor), was strongly confirmed by a brief talk he and I had when we met as members of a panel on Vietnam veterans at a psychoanalytic conference.*

scientifically based spiritual omniscience—a stance he is likely to find much too seductive to refuse entirely. Anointed with both omniscience and objectivity, and working within a market economy, his allegedly neutral talents become available to the highest bidder. In a militarized society they are equally available to the war-makers.

VII

The technicist model in psychiatry works something like this: A machine, the mind-body function of the patient, has broken down; another machine, more scientifically sophisticated— the psychiatrist—is called upon to "treat" the first machine; and the treatment process itself, being technical, has nothing to do with place, time, or individual idiosyncrasy. It is merely a matter of being a technical-medical antagonist of a "syndrome" or "disease." Nor is this medical-technical model limited to physicians—nonmedical psychoanalysts and psychotherapists can be significantly affected by it. And the problem is not so much the medical model as such as it is the technicism operating within that model.* The technicism in turn feeds (and is fed by) a denial of acting within and upon history.

To be sure no psychiatrist sees himself as functioning within this admittedly overdrawn model. But its lingering technicism is very much with us and can have the catastrophic results we have observed. Even psychological groups bent on breaking out of this technicism, such as some within the humanistic psychology movement (or "third force"), can be rendered dependent upon it by their very opposition, to the point of being unable to evolve an adequate body of theory and practice of their own.

An alternative perspective, in my judgment, must be not only psychohistorical, but also psychoformative. By the latter I mean a stress upon the process of inwardly re-creating all that is perceived or encountered.[19] As in the work of Langer and Cassirer,[20] my stress is upon what can be called a formative-symbolic *process*, upon symbolization rather than any particular symbol (in the sense of one thing standing for another). The approach connects with much in twentieth-century thought, and seeks to overcome the nineteenth-century emphasis upon mechanism, with its stress upon breakdown of elements into component parts—an emphasis inherited, at least in large part, by psychoanalysis, as the word itself suggests.[21] Twentieth-century technicism could be described as an aberrant (and in a sense nostalgic) re-creation of nineteenth-century mechanism. In contrast, a focus upon images and forms (the latter more structured and more enduring than the former) and upon their continuous development and re-creation gives the psychiatrist a way of addressing historical forces without neglecting intrapsychic concerns.

The anti-war passions of a particular Vietnam veteran, for instance, had to be understood as a combined expression of many different psychic images and forms: the Vietnam environment and the forces shaping it; past individual history; the post-Vietnam American experience, including VVAW and the rap groups and the historical forces shaping these; and the various emanations of guilt, rage, and altered self process that could and did take shape. Moreover, professionals, like myself, who entered into the lives of these veterans—with our own personal and professional histories, personal struggles involving the war, and much else—became a part of the overall image-form constellation.

Psychiatrists have a great temptation to swim with an Anerican tide that grants them considerable professional status but resists, at times quite fiercely, serious attempts to alter existing social and institutional arrangements. As depth psychologists and psychoanalysts we make a kind of devil's bargain that we can plunge as deeply as we like into intrapsychic conflicts while not touching too critically upon historical dimensions that question those institutional arrangements. We often accept this dichotomy quite readily with the rationale that, after all, we are not historians or sociologists. But the veterans' experience shows that one needs extrospection as well as introspection to deal with psychological conflicts, particularly at a time of rapid social change. And I believe that a general psychological paradigm of 'death and the continuity of life'[25] helps us to achieve this dual perspective, and to recognize the interplay of psychological and moral elements in relationship to ultimate commitments and our own involvement in that interplay.

All this points toward the need for a transformation of the healing professions themselves. In my work with veterans I restated a model of change I had elaborated in earlier work, based on a sequence of confrontation, reordering, and renewal.[26] The idea is worth stating at least as a model—not with any expectation of instant transformation, but with the recognition that, here and there, people are already pursuing it, and will undoubtedly continue to do so in forms we have not yet imagined. Confrontation for the veterans meant confronting the idea of dying in Vietnam, often through the death of a buddy. For psychiatrists it would mean confrontation of our own concerns about death, mortality and immortality, and our professional struggles with them. Reordering meant the working through of difficult emotions around guilt and rage; for psychiatry this would mean seeking animating relationships to the same emotions in ourselves and recognizing and making use of our experience of despair.[27] Renewal for veterans meant a new sense of self and world, including an enhanced playfulness. The professional parallels are there, and much can be said for the evolution of more playful modes of investigation and therapy.

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* *In this sense I am in sympathy with Szasz*[22] *and Laing*[23] *in their stress on the repressive uses of the medical model, but also with Humphrey Osmond's defense of the enduring, human core of the medical model, which has "stood the test of millennia,"*[24] *and contains still untapped resources for us. I believe that the medical model of disease and healing is still needed by psychiatrists, at least in some of our work and thought, but that it must itself be liberated from its technicist fetters.*

I want to conclude with two quotations. The first is from Stanley Milgram, who performed controversial experiments on the willingness of people to cause pain and even endanger the lives of others, when authoritatively requested to do so. Whatever one's view of the scientific and moral aspects of these "Eichmann experiments," one of Milgram's own conclusions is worth thinking about: "Men are doomed if they act only within the alternatives handed down to them."[28]

And finally, Joseph Campbell, perhaps American's most distinguished student of mythology: "A god outgrown becomes immediately a life-destroying demon. The form has to be broken and the energies released."[29]

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See Brief Summary

*See dosage and administration section of Brief Summary

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Must a Patient Be a "Person" to Be a Patient

or

My Uncle Charlie is not Much of a Person But He is Still My Uncle Charlie

Stanley Hauerwas, Ph.D.

As a Protestant teaching at a Catholic University, I continue to learn about problems I had no idea even existed. For example, recently I was called down for referring to Catholics as "Roman Catholics." I had been working on the assumption that a Catholic was a Roman Catholic, however it was pointed out to me that this phrase appeared only with the beginning of the English reformation in order to distinguish a Roman from an Anglo-Catholic. A Catholic is not Roman, as my Irish Catholic friend emphatically reminded me, but is more properly thought of simply as a Catholic.

I recount this tale because I think it has something to do with the issue I want to raise for our consideration. For we tend to think that most of our descriptions, the way we individuate action, have a long and honored history that can be tampered with only with great hesitation. Often, however, the supposed tradition is a recent innovation that may be as misleading as it is helpful.

That is what I think may be happening with the emphasis on whether someone is or is not a "person" when this is used to determine whether or what kind of medical care a patient should receive. In the literature of past medical ethics the notion of "person" does not seem to have played a prominent role in deciding how medicine should or should not be used vis-a-vis a particular patient. Why is it then that we suddenly seem so concerned with the question of whether someone is a person? It is my hunch we have much to learn from this phenomenon as it is an indication, not that our philosophy of medicine or medical ethics is in good shape, but rather that it is in deep trouble. For it is my thesis that we are trying to put forward "person" as a regulative notion to direct our health care as substitute for what only a substantive community and story can do.

However, before trying to defend this thesis, let me first illustrate how the notion of "person" is being used in relation to some of the recent issues of medical ethics. Paul Ramsey in his book, *The Patient as Person,*[1] uses the notion of person to protect the individual patient against the temptation, especially in experimental medicine, to use one patient for the good of another or society. According to Ramsey, the major issue of medical ethics is how to reconcile the welfare of the individual with the welfare of mankind when both must be served. Ramsey argues that it is necessary to emphasize the personhood of the patient in order to remind the doctor or the experimentor that his first responsibility is to his immediate patient, not mankind or even the patient's family. Thus Ramsey's emphasis on "person" is an attempt to provide the basis for what he takes to be the central ethical commitment of medicine— namely, that no man will be used as a means for the good of another. Medicine can serve mankind only as it does so through serving the individual patient.

Without the presumption of the inviolability of the "person," Ramsey thinks that we would have no basis for "informed consent" as the controlling criteria for medical therapy and experimentation. Moreover, it is only on this basis that doctors rightly see that their task is not to cure diseases, but rather to cure the person who happens to be subject to a disease. Thus, the notion of "person" functions for Ramsey as a Kantian or deontological check on what he suspects is the utilitarian bias of modern medicine.

However, the notion of "person" plays quite a different function in other literature dealing with medical ethics. In these contexts, "person" is not used primarily as a protective notion, but rather as a permissive notion that takes the moral heat off certain quandaries raised by modern medicine. It is felt if we can say with some assuredness that X, Y, or Z is not a person, then our responsibility is not the same as it is to those who bear this august title.

Of course, the issue where this is most prominent is abortion. Is the fetus a human person? Supposedly on that question hangs all the law and the prophets of the morality of abortion. For if it can be shown that the fetus is not a person, as indeed I think it can be

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STANLEY HAUERWAS, Ph.D., Department of Religion, Notre Dame University, Indiana, presented this paper at the University of Connecticut Health Center as part of the program, "Focal Issues for the Public and the Professionals—Forum on Human Values and Health Care." The program on May 14, 1975, was "The Patient as Person: From Abortion to Euthanasia." The Forums are supported by a grant (CHC-G-7404) awarded by the Connecticut Humanities Council under the auspices of the National Endowment for the Humanities to Stuart F. Spicker, Ph.D., Forum moderator and director of Humanistic Studies in Medicine in the School of Medicine. The May Forum was co-sponsored by the Connecticut Women's Educational and Legal Fund, Inc.

shown, then the right to the care and protection that modern medicine can provide is not due to the fetus. Indeed, the technological skill of medicine can be used to destroy such life, for its status is of no special human concern since it lacks the attribute of "personhood."

Or, for example, the issue of *when* one is a person is raised to help settle when it is morally appropriate to withdraw care from the dying. If it can be shown, for example, that a patient has moved from the status of being a person to a non-person, then it seems that many of the difficult decisions surrounding what kind and the extent of care that should be given to the dying becomes moot. For the aid that medicine can bring is directed at persons, not at the mere continuation of our bodily life. (Since I will not develop it further, however, it is worth mentioning that this view assumes a rather extreme dualism between being a person and the bodily life necessary to provide the conditions for being a person.)[2]

Or, finally, there are the issues of what kind of care should be given to defective or deformed infants in order to keep them alive. For example, Joseph Fletcher has argued that any individual who fails below the 40 I.Q. mark in a Stanford-Binet test is "Questionably a person," and if you score 20 or below you are not a person.[3] Or Michael Tooley has argued young infants, indeed, are not "persons" and, therefore, do not bear the rights necessary to make infanticide a morally questionable practice.[4] Whether, or what kind, of medical care should be given to children is determined by whether children are able to meet the demands of being a person. You may give then life-sustaining care, but in doing so you are acting strictly from the motive of charity since nothing obligates you to do so.

As I suggested at the first, I find all this rather odd, not because some of the conclusions reached by such reasoning may be against my own moral opinions, or because they entail practices that seem counter-intuitive (e.g., infanticide), but rather because I think this use of "person" tends to do violence to our language. For example, it is only seldom that we have occasion to think of ourselves as "persons"— when asked to identify myself, I do not think that I am a person, but I am Stanley Hauerwas, teacher, husband, father, or ultimately, a Texan. Nor do I often have the occasion to think of others as persons. I do sometimes say, "Now that Joe is one hell of a fine person," but so used "person" carries no special status beyond the naming of a role. If I still lived in Texas, I would, as a matter of fact, never use such an expression, but rather say, "Now there is a good old boy."

Moreover, it is interesting to notice how abstract the language of person is in relation to our first order moral language through which we live our lives and see the kind of issues I have mentioned above. For example, the reason that we do not use one man for another or society's good is not that we violate his "person," but rather because we have learned that it is destructive of the trust between us to do so. (Which is, in fact, Ramsey's real concern as his case actually rests much more on his emphasis on the "covenant" between doctor and patient, rather than on the status of the patient as a "person.") For example, it would surely make us hesitant to go to a doctor if we thought he might actually care for us only as means of caring for another. It should be noted, however, that in a different kind of society it might well be intelligible and trustworthy for the doctor rightly to expect that his patient be willing to undergo certain risks for the good of the society itself. I suspect that Ramsey's excessive concern to protect the patient from the demands of society through the agency of the doctor is due to living in an extraordinarily individualistic society where citizens share no good in common.

Even more artificial is the use of "person" to try to determine the moral decision in relation to abortion, death, and the care of the defective newborn. For the issues surrounding whether an abortion should or should not be done seldom turn on the question of the status of the fetus. Rather, they involve why the mother does not want the pregnancy to continue, the conditions under which the pregnancy occurred, the social conditions into which the child would be born. The question of whether the fetus is or is not a person is almost a theoretical nicety in relation to the kind of questions that most abortion decisions actually involve.

Or, for example, when someone is dying, we seldom decide to treat or not to treat them because they have or have not yet passed some line that makes them a person or non-person. Rather, we care or do not care for them because they are Uncle Charlie, or my father, or a good friend. In the same manner, we do not care or cease to care for a child born defective because it is or is not a person. Rather, whether or how we decide to care for such a child depends on our attitude toward the having and caring for children, our perception of our role as parents, and how medicine is seen as one form of how care is to be given to children.[5] (For it may well be that we will care for such children, but this does not mean that medicine has some kind of overriding claim on being the form that such care should take.)

It might be felt that these examples assume far too easily that our common notions and stories are the primary ones for giving moral guidance in such cases.

Exactly what the attempt to develop the notion of "person" as the regulatory notion determining such issues might be, is to find a firmer basis than these more historically and socially contingent notions can provide. But I am suggesting that is just what the notion of "person" cannot do without seriously distorting the practices, institutions, and notions that underlay how we have learned morally to display our lives. More technically, what advocates of "personhood" have failed to show is how the notion of person works in a way of life with which we wish to identify.

Yet, we feel inextricably drawn to come up with some account that will give direction to our medical practice exactly, because we sense that our more immediate moral notions never were or are no longer sufficient to provide such a guide. Put concretely, we are beginning to understand how much medicine depended on the moral ethos of its society to guide how it should care for children, because we are now in a period when some people no longer think simply because a child is born to them they need regard it as their child. We will not solve this kind of dilemma by trying to say what the doctor can and cannot do in such circumstances in terms of whether the child can be understood to be a "person" or not.

As Paul Ramsey suggests, we may have arrived at a time when we have achieved an unspeakable thing: a medical profession without a moral philosophy in a society without one either. Medicine, of course, still seems to carry the marks of a profession inasmuch as it seems to be a guardian of certain values—that is, the unconditional commitment to preserve life and health; the responsibility for justifying the patient's trust in the physician; and the autonomy of the physician in making judgments on others in the profession. But, as Alasdair MacIntyre has argued, these assumed virtues can quickly be turned to vices when they lack a scheme, or, in my language, a story that depends on further beliefs about the true nature of man and our true end.[6] But such a scheme is exactly what we lack, and it will not be supplied by trying to determine who is and is not a "person."

The language of "person" seems convenient to us, however, because we wish to assume that our medicine still rests on a consensus of moral beliefs. But I am suggesting that is exactly what is not the case and, in the absence of such a consensus, we will be much better off to simply admit that morally there are many different ways to practice medicine. We should, in other words, be willing to have our medicine as fragmented as our moral lives. I take this to be particularly important for Christians and Jews, as we have been under the illusion that we could morally expect medicine to embody our own standards, or, at least, standards that we could sympathize with. I suspect, however, that this may not be the case, for the story that determines how the virtues of medicine are to be displayed for us is quite different than the one claimed by the language of "person."[7] It may be then, if we are to be honest, that we should again think of the possibility of what it might mean to practice medicine befitting our convictions as Christians or Jews. Yet, there is a heavy price to be paid for the development of such a medical practice, as it may well involve training and going to doctors whose technology is less able to cure and sustain us than current medicine provides. But, then, we must decide what is more valuable, our survival or how we choose to survive.

REFERENCES

1. Ramsey Paul: *The Patient as Person*, Yale University Press, New Haven, 1970

2. For a more extended analysis of this point, see my *Vision and Virtue: Essays in Christian Ethical Reflection*, Fides Press, Notre Dame, Indiana, 1974

3. Fletcher Joseph: "Indicators of Humanhood," *Hastings Center Report*, November, 1972, 1-3; also see my response in "The Retarded and the Criteria of Human, *Linacre Quarterly*, November, 1973, 217-222

4. Tooley Michael: "A Defense of Abortion and Infanticide," *The Problem of Abortion*, edited by Joel Feinberg, Wadsworth Publishing Company, Belmont, 1973, 51-91.

5. For an extended analysis of these issues, see my "The Demands and Limits of Care: Ethical Reflections on the Moral Dilemma of Neonatal Intensive Care," *American Journal of Medical Science*, March-April, 1975, 269-291

6. MacIntyre Alasdair: "How Virtues Become Vices: Values, Medicine and Social Context," *Evaluation and Explanation in the Biomedical Sciences*, Reidel, Dordrecht, 1975, 97-111

7. For I would not deny that advocates of "person," or the regulatory notion of medical care, are right to assume that the notion of person involves the basic libertarian values of our society. It is my intention that such values are not adequate to direct medicine in a humane and/or Christian manner.

BOOK REVIEWS

The Ethics of Fetal Research. By Paul Ramsey, 125 pp. New Haven, Yale University Press, 1975. $2.95.

Paul Ramsey is Professor of Religion at Princeton University; he has devoted his effort to medical ethics and has become one of the true experts on the subject in this country. His interest is not superficial, but is based on an intelligent lay person's study in depth of the scientific principles related to and involved in medical problems, based on a solid foundation of theology and ethics.

His paperback is timely. He does not attempt to be definitive nor to give final answers, but tries, and does well, to bring to the reader's attention the ethical problems involved. Fetal research involves not only experimentation on the fetus, but relates closely to abortion. His discussion adds to the ferment that is going on in our society, among ethicists, religionists, the medical profession, and above all, society as reflected in the law beginning in opinions of the courts and judges in the tradition of the common law. In other words, ethical discussions and problems related to the fetus and fetal experimentation are an idea whose time has come, and this book of Professor Ramsey's is a good introduction not only for the lay man, but for the physician and medical scientist.

Though Professor Ramsey does not imply that it is meant to be definitive, he nevertheless has definite opinions about abortion and the rights of the fetus. He questions that the ultimate decision about a conceived fetus should be that of the parents. Is theirs the right to decide whether or not a fetus is to be considered human life, or to be destroyed by an abortion? Even since the Supreme Court decision on abortion does this preclude discussion by society? He believes not.

But the overriding question is that of fetal research. And what should be the point of reference? To him, fetal research should be relevant to the condition of the aborted fetus, and the model for the aborted fetus should be that of the human. Though I found it difficult to understand, let alone accept, his conception of "relevant fetal research," I think he accomplishes what I understand to be his real goal—to stimulate the reader to consider and ponder questions about research not only on the fetus, but on children, by medical scientists and clinicians.

The medical profession is fortunate to have someone like Professor Ramsey devote his career to this growing and complex field of medical ethics, or as some prefer, the new bioethics. The reviewer recommends purchase and study of "The Ethics of Fetal Research."

Fred Fabro, M.D.

BOOKS RECEIVED

The receipt of the following books is acknowledged, and this listing must be regarded as sufficient return for the courtesy of the sender. Books that appear to be of particular interest will be reviewed as space permits.

Review of Medical Physiology. Seventh Edition. William F. Ganong, M.D. 587 pp. Illustrated. Canada. Lange Medical Publications. 1975. $10.50.

The Ciba Foundation: An Analytic History 1949-1974. First Edition. F. Peter Woodford. 212 pp. New York. Associated Scientific Publishers. 1974. No price given.

Energy Transformation in Biological Systems. Ciba Foundation Symposium 31 (new series). First Edition. 416 pp. Amsterdam. Associated Scientific Publishers. 1975. No price given.

Review of Physiological Chemistry. 15th Edition. H. A. Harper. 570 pp. Los Altos, California. Lange Medical Publications. 1975. $10.00.

IMPORTANT INFORMATION: *This is a Schedule V substance by Federal law; diphenoxylate HCl is chemically related to meperidine. In case of overdosage or individual hypersensitivity, reactions similar to those after meperidine or morphine overdosage may occur; treatment is similar to that for meperidine or morphine intoxication (prolonged and careful monitoring). Respiratory depression may recur in spite of an initial response to Nalline® (nalorphine HCl) or Narcan® (naloxone HCl) or may be evidenced as late as 30 hours after ingestion. LOMOTIL IS NOT AN INNOCUOUS DRUG AND DOSAGE RECOMMENDATIONS SHOULD BE STRICTLY ADHERED TO, ESPECIALLY IN CHILDREN. THIS MEDICATION SHOULD BE KEPT OUT OF REACH OF CHILDREN.*

Indications: Lomotil is effective as adjunctive therapy in the management of diarrhea.

Contraindications: In children less than 2 years, due to the decreased safety margin in younger age groups, and in patients who are jaundiced or hypersensitive to diphenoxylate HCl or atropine.

Warnings: Use with special caution in young children, because of variable response, and with extreme caution in patients with cirrhosis and other advanced hepatic disease or abnormal liver function tests, because of possible hepatic coma. Diphenoxylate HCl may potentiate the action of barbiturates, tranquilizers and alcohol. In theory, the concurrent use with monoamine oxidase inhibitors could precipitate hypertensive crisis. In severe dehydration or electrolyte imbalance, withhold Lomotil until corrective therapy has been initiated.

Usage in pregnancy: Weigh the potential benefits against possible risks before using during pregnancy, lactation or in women of childbearing age. Diphenoxylate HCl and atropine are secreted in the breast milk of nursing mothers.

Precautions: Addiction (dependency) to diphenoxylate HCl is theoretically possible at high dosage. Do not exceed recommended dosages. Administer with caution to patients receiving addicting drugs or known to be addiction prone or having a history of drug abuse. The subtherapeutic amount of atropine is added to discourage deliberate overdosage; strictly observe contraindications, warnings and precautions for atropine; use with caution in children since signs of atropinism may occur even with the recommended dosage. Use with care in patients with acute ulcerative colitis and discontinue use if abdominal distention or other symptoms develop.

Adverse reactions: Atropine effects include dryness of skin and mucous membranes, flushing, hyperthermia, tachycardia and urinary retention. Other side effects with Lomotil include nausea, sedation, vomiting, swelling of the gums, abdominal discomfort, respiratory depression, numbness of the extremities, headache, dizziness, depression, malaise, drowsiness, coma, lethargy, anorexia, restlessness, euphoria, pruritus, angioneurotic edema, giant urticaria, paralytic ileus, and toxic megacolon.

Dosage and administration: ***Lomotil is contraindicated in children less than 2 years old.*** Use only Lomotil liquid for children 2 to 12 years old. For ages 2 to 5 years, 4 ml. (2 mg.) t.i.d.; 5 to 8 years, 4 ml. (2 mg.) q.i.d.; 8 to 12 years, 4 ml. (2 mg.) 5 times daily; adults, two tablets (5 mg.) t.i.d. to two tablets (5 mg.) q.i.d. or two regular teaspoonfuls (10 ml., 5 mg.) q.i.d. Maintenance dosage may be as low as one fourth of the initial dosage. Make downward dosage adjustment as soon as initial symptoms are controlled.

Overdosage: Keep the medication out of the reach of children since accidental overdosage may cause severe, even fatal, respiratory depression. Signs of overdosage include flushing, hyperthermia, tachycardia, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils and respiratory depression which may occur 12 to 30 hours after overdose. Evacuate stomach by lavage, establish a patent airway and, when necessary, assist respiration mechanically. A narcotic antagonist may be used in severe respiratory depression. Observation should extend over at least 48 hours.

Dosage forms: Tablets, 2.5 mg. of diphenoxylate HCl with 0.025 mg. of atropine sulfate. Liquid, 2.5 mg. of diphenoxylate HCl and 0.025 mg. of atropine sulfate per 5 ml. A plastic dropper calibrated in increments of ½ ml. (total capacity, 2 ml.) accompanies each 2-oz. bottle of Lomotil liquid.

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Summary of Actions
Council Meeting

Thursday, October 23, 1975

I. Attendance

Present in addition to the Chairman, Dr. D. A. Grendon, and the Vice Chairman, Dr. J. K. Freedman, were: Drs. VanSyckle, Spitz, Friedberg, Johnson, Backhus, Root, Jr., Gardner, Hess, Bradley, Cramer, Fabro, Granoff, Kenigsberg (FCMA substitute for Councilor and/or Associate Councilors), Rubinow, James, Krinsky, Sonnen, Klare, Robinson, Magram, Mendillo, Eslami and Barrett.

Also present: Mrs. Lindquist, Mr. Tomat, Mr. Sweeney, Mr. Sullivan (AMA) and Dr. Richards.

Absent were: Drs. Nolan, Kamens, Ragland, Jr., McGarry, Beck, Canzonetti, Harkins, Dambeck and Bird.

II. Routine Business

Approval of Minutes

As published and distributed, it was VOTED to approve the minutes of the meeting of September 17, 1975, with the amendment that Hilliard Spitz, Vice President, is to be recorded as "present."

Life Memberships

It was VOTED to approve application for Life Membership received from the following eligible Active Member:

Orvan W. Hess, 2 Church St., South, New Haven.

Date of Next Meeting

The next meeting of the Council will be at the call of the Chairman.

III. Old, New and Special Business

Election of Student Members

It was VOTED to elect to Student Membership 46 Connecticut residents who are enrolled as students in American medical schools. The names of those elected will be published in an early issue of the Journal.

Resignations, Appointments, Etc.

(a) *Committee on Mental Health:* It was VOTED to accept the resignation of John E. Donnelly, Bethany, as a member of the Committee, and it was further VOTED to appoint Frank K. Abbot, Cromwell, to replace Dr. Donnelly as a member of the Committee for the balance of the term 1974-79.

(b) *Committee on Maternal Morbidity and Mortality:* It was VOTED to appoint nine new Committee members as follows: Frederick S. Eadie, Norwich; William E. Furniss, Bristol; John Gibbons, Hartford; Robert S. Gordon, New Haven; Robert Hook, New Haven; Richard D. Otis, Hartford; Brian F. Rigney, New Haven; Edward M. Segall, Waterbury; and Cleo I. Siderides, Stamford.

Completion of Actions on 9/17/75 Report—Committee on Legislation

It was VOTED to approve and implement (by Staff) recommendations of the Committee as follows:

(1) That the Council seek to gain the cooperation of the component County Medical Associations in providing physician members who can and are willing to testify at hearings on bills on which the Society has taken a position.

(2) That the Council encourage the component County Medical Associations to take an active part in a program of one-on-one contacts with legislators by physicians—especially with legislators known to the physicians, either personally or professionally.

(3) That the Council consider employing a full-time CSMS staff person with a primary assignment to legislative activities, and, during sessions of the General Assembly, to spend time and function "at the Capitol and its environs" as outlined by CSMS legislative counsel in a subject memorandum to the Committee.

(4) That the Council consider retaining Kenneth F. Brandon, Hartford, as consultant to the Society's legislative counsel and staff on the basis of reimbursement of expenses and an honorarium, with the understanding that service in such post would be separate from his assigned duties as elected chairman of the Committee on Legislation. Some of the consulting services envisioned by the Committee as being furnished by Dr.

Brandon were: Active participation in the drafting of the Society's policy statements on bills under consideration by the Assembly; scheduled or standby appearances at legislative hearings as spokesman for the Society on bills on which positions have been taken; being available to CSMS legislative counsel and staff for advice and informal meetings with key legislators.

Completion of Actions on 9/17/75 Report—Committee on Statewide Medical Planning

Implementation of P.L. 93-641: It was VOTED to receive as information those sections of the Committee's report which dealt with P.L. 93-641; also, a report submitted by Orvan W. Hess, New Haven, on the same subject. It was further VOTED to approve recommendations of the Committee, as amended by the Screening Committee, as follows: (1) That the Council seek qualified members to nominate for membership on the (P.L. 93-641) Statewide Health Coordinating Council (SHCC), and urge the applicable County Medical Association(s) in the five Health Service Areas to attempt to get qualified members seated on each board of directors of the Health System Agencies to be established in those five areas; (2) Notify Governor Grasso of the Council's desire and willingness to assist in the recruitment of qualified physicians to be considered for her appointment to membership on the SHCC.

Report—Ad Hoc Committee on Malpractice Insurance Study

It was VOTED to receive as information a subject report filed by the Ad Hoc Committee which consisted of the minutes of a meeting held on 9/17/75. In brief, the report noted that Attorney Philip R. Dunn, West Hartford, has been retained as legislative counsel for the Committee on Professional Liability; that provisions have been made for programs of public and professional education on the subject of malpractice insurance and the serious problems it is currently faced with; that plans were finalized for a five-member "team" of CSMS representatives to testify for the Society at a 10/10 hearing to be held by the General Assembly's study committee on malpractice; and that Mr. Leonard R. Tomat, Asssistant Executive Director, will serve as principal Staff liaison person between the CSMS Committee on Professional Liability and the Assembly's study committee. It was further VOTED to designate the committee as the "Ad Hoc Committee on Malpractice Insurance Study" during the balance of its period of ad hoc operation.

Report—Meeting on Physician Discipline

It was VOTED to receive as information a report submitted by the President, Guy W. VanSyckle, on the subject and proceedings of a meeting called by the State Commissioner of Health, Dr. Lloyd, 9/11/75. Dr. VanSyckle attended the meeting, by invitation, as the representative of the Society. Others present represented the Medical Examining Board, the Connecticut Hospital Association, the State Attorney General's office, CMI, Inc., the State Health Department and State Senator Joseph I. Lieberman. In brief, the report indicated that Commissioner Lloyd is of the opinion that new legislation will be necessary for his Department and the State generally to deal effectively with the incompetent physician, the "sick doctor," etc. In pursuit of this goal, he has requested input from the various organizations and agencies represented at the meeting. Acting on a recommendation of Dr. VanSyckle, the Council VOTED to authorize him to form an ad hoc committee to make a study of the matters outlined in the report and to file a report thereon, with recommendations, at the semi-annual meeting of the House of Delegates on 11/19/75.

CSMS Budget for Fiscal 1976

It was VOTED to approve the budget and the dues structure for fiscal 1976, as prepared and presented by the Fiscal Subcommittee, and to transmit same to the House of Delegates on 11/19/75 with Council recommendation for approval by the House. If approved by the House, CSMS membership dues in 1976 will be increased from $85 to $90.

Proposed Committee on Medical Aspects of Sports

The Council gave further consideration to the subject proposal, originally discussed at the 5/21/75 meeting. Having received favorable reports from the Committee on Public Relations and the Committee on Accident Prevention and EMS, the Council VOTED to approve the establishment of a Committee on the Medical Aspects of Sports as a standing committee of the House of Delegates and to recommend approval by the House of Delegates on 11/19/75. It was further VOTED to instruct CSMS Staff to draw up for presentation to the House a document which: (a) outlines the proposed functions of the committee; (b) provides for the annual election of committee members and the naming of the chairman by the House of Delegates; (c) limits the authorized strength of the committee to "not more than 12 members;" (d) establishes the committee as the editorial board of the CSMS publication "Connecticut Sportsmed;" (e) establishes the chairman of the committee as the editor of "Sportsmed" during his tenure as chairman; (f) nominates Norman A. Zlotsky, Rockville, for election by the House of Delegates as chairman of the committee and editor of "Sportsmed;" and (g) requests the House to authorize the Council to appoint the balance of the committee membership for 1975-76 (until the 1976 annual meeting of the House).

Continued Publication and Funding of "Connecticut Sportsmed"

It was VOTED to approve a recommendation of the Committee on Public Relations that the four-issue publication of "Sportsmed" be continued for another 12 months and that the printing and distribution be increased to 1,200 copies per issue. The Council further VOTED to inform the chairman of the new Committee on the Medical Aspects of Sports, if approved for establishment by the House of Delegates, that if it is planned to continue the publication of "Sportsmed" annually, a recommendation for funding should be made to the Fiscal Subcommittee (and the Council) for inclusion as an identifiable item in the budget for fiscal 1977 and thereafter.

Continuation of "Louis H. Nahum Award for Medical Writing" Program

It was VOTED to approve a recommendation of the Committee on Public Relations that this award program be continued in 1976 essentially unchanged from the 1975 programs i.e., that entries be solicited from Student Members of the Society and from students enrolled at the Yale and UConn medical schools. The one change of consequence that will be made is to limit entries to articles written by a single author.

Proposed Exhibit at AMA Meeting— Cancer Coordinating Committee

It was VOTED to approve a proposal of the CCC that an exhibit be made at the forthcoming meeting of the American Medical Association, Honolulu, Hawaii, 12/1-5/75, which will beature a display of the brochure "Followup of Cancer," a publication published under the joint sponsorship of CSMS, the Connecticut Division of the American Cancer Society and the Connecticut State Department of Health.

Report of "Connecticut AMA Delegation" re AMA Membership

It was VOTED to receive as information two documents as follows: (a) A Staff-prepared analysis of CSMS-AMA membership during the past nine years, and (b), a report on a meeting of the Delegation on 9/17/75, filed by J. Alfred Fabro. In brief, the Staff analysis showed a slow but steady decline in both the numbers and percentages of CSMS dues-paying members who are also AMA members. Following brief discussion of the information received, the Council further VOTED to recommend to the House of Delegates on 11/19/75 that there be "unified membership" in Connecticut and that the Chairman of the Council appoint an ad hoc committee to develop a mechanism for implementing such "unified membership" for presentation to the House as an adjunct to the recommendation of the Council. The Chairman appointed the ad hoc committee as follows: E. Tremain Bradley, Norwalk, chairman; Sidney L. Cramer, Hartford; J. Alfred Fabro, Torrington; Orvan W. Hess, New Haven; and Hilliard Spitz, New London.

Motion Submitted by Isadore H. Friedberg, Newington

It was VOTED to approve a motion submitted by Dr. Friedberg which read as follows: That the Council of CSMS establish a special study group (or "think tank") with the specific charge at this time to consider and plan for any type of spontaneous or duly considered strike or job action on the part of any or all members of the Connecticut State Medical Society. It was then immediately VOTED to request Dr. Friedberg to prepare and submit specific plans for the implementation of the purposes of the foregoing motion.

At a later point in the meeting, Dr. Friedberg submitted in writing the said "specific plans" for the implementation of the motion and the Council further VOTED to approve plans, with minor amendment, as follows:

1. That an ad hoc committee of not less than 6 or more than 12 members be chosen by the Chairman of the Council who shall also appoint the chairman thereof. The membership of the ad hoc committee shall include representatives of the Council and members of the Society at large. The ad hoc committee shall report to the Council at frequent intervals.
2. That the House of Delegates be asked to endorse this action at its semi-annual meeting on 11/19/75.
3. That if so endorsed by the House of Delegates, the ad hoc committee be charged to address itself forthwith to two avenues of activity: (a) A study of strikes and job actions to determine their strengths and follies, to determine their advisability or their inadvisability in terms of local action, to determine their techniques when indicated, and to seek advice and counsel from those with expertise and experience; (b) Following or parallel with the conduct of such study, draw up general policy statements, techniques for public relations, seek legal opinions when necessary, consider the role of the physician as a strike

breaker, delegate responsibility to key members to serve as source people, arbitrators, leaders and the like.

Report—Delegate to Medical Society of New Jersey

It was VOTED to receive as information a report submitted by Morris A. Granoff, New Haven, on the proceedings of the annual meeting of MSNJ (Cherry Hill, N.J., May 1-June 3, 1975) which he attended as delegate from CSMS. At the conclusion of his report Dr. Granoff made a series of recommendations to the Council which were acted on as follows:

(1) It was VOTED to approve a recommendation that the Subcommittee on Annual Meeting Arrangements consider and report to the Council on the feasibility of holding annual meetings of the Society in mid- or late-May, over a weekend, at a resort area in Connecticut.

(2) It was VOTED to approve a recommendation that a member of the Council be designated to serve as "host" for each of the delegates from other state medical societies who attend the annual meeting of CSMS, and to direct Staff to arrange for such designations to be made and the "host" program implemented at the 1976 annual meeting of the Society.

(3) It was VOTED to approve a recommendation that the CSMS Committee on Professional Liability be directed to continue to explore with the Aetna Life and Casualty Co. the possibility of conducting meaningful negotiations regarding premiums for professional liability insurance.

(4) It was VOTED to approve a recommendation that the present award program for physicians who have completed fifty years of membership in the Society be discontinued and replaced by a program of awards for members who have held the degree of Doctor of Medicine for fifty years, and to direct Staff to implement the replacement program to be effective at the 1976 annual meeting of the Society.

N.B.: *The foregoing is a summary of the proceedings and actions of the Council on October 23, 1975. Detailed minutes of the meetings are on file at 160 St. Ronan Street, New Haven, for perusal by any interested member of the Society.*

NEW MEMBERS
of the State Society

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Borden Brown, Hartford
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John T. Hornblow, Hartford
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Thomas J. Stevens, Hartford
Steven A. Stier, New Britain
Michael J. Tortora, Hartford
Sidney Ulreich, New Britain
William J. Vacek, Glastonbury
William A. F. Woods, Hartford

MIDDLESEX COUNTY

Joseph A. Flanagan, Middletown
Margaret D. Kelly, Middletown

LABORATORY NOTES

Insulin Assays

We are now performing insulin assays by RIA. Our normal fasting range is 5-28 microunits/ml. Gross obesity is associated with high fasting insulin.[1] There are two clinical indications for analysis of serum insulin.

1. Hypoglycemic States

Insulin levels are inappropriately high in insulin secreting tumors but are not appreciably elevated with the spontaneous hypoglycemia often seen in young persons.

2. Diagnosis and classification of diabetes mellitus.

Insulin levels in the normal person follow plasma glucose levels very closely during oral glucose tolerance test (OGTT). Diabetics may be classified if simultaneous OGTT and plasma insulin are determined.[1] The three groups are:

1. **Borderline.** Normal fasting glucose, some elevation of later values, delay in insulin release (peak at 90 minutes).
2. **Adult Onset.** Portion or all of OGTT elevated; elevated fasting insulin with further delay in release (peak at 120 minutes); poor correlation between levels of glucose and insulin.
3. **Moderately severe.** Portion or all of OGTT elevated; fasting insulin elevated but no rise during test.

McReynolds et al[1] believe that the diabetic state progresses through the three stages above to severe clinically evident diabetes.

H. Truax, M.D.

[1] McReynolds et al; Ann. Clin. Lab. Sci. *3*, 54, 1973.

Platelet Aggregometry

Platelet aggregometry is a test for those defects in platelet metabolism (Thrombocytopathy) which produce unexplained platelet associated defects in coagulation *without* thrombocytopenia. These defects include prolonged bleeding time, poor clot retraction, reduced PT consumption, and purpura.

Normal platelets aggregate in-vitro under the stimuli of ADP, epinephrine, and collagen. At appropriate concentration ADP and epinephrine cause a two phase reaction, primary aggregation and then endogenous release of ADP with a second wave of aggregation. Measurements are made with our new platelet aggregometer.

Diseases which may be associated with one or more defects in response are:

Glanzmanns	No ADP reaction
Storage Pool disease	No 2nd wave
Aspirin	No 2nd wave

Other drugs which can cause defective aggregation include anti-inflammatory drugs, phenothiazines, anti-histamines, anti-depressants and others.

Failure to aggregate with Ristocetin is a good test for Von Willebrand's disease and the Bernard-Soulier syndrome but the reagent is not readily available.

Aggregometry is expensive and tedious. It should be reserved for the *non*-thrombocytopenic patient with evidence of poor platelet function.

Prior scheduling and discussion with the clinical pathologist is necessary.

I. Weisbrot, M.D.

Fibrinolysis

In the past few years the Disseminated Intravascular Coagulation syndrome (DIC) and the Primary Fibrinolysis syndrome have been subjects of much investigation. DIC is much more common than primary fibrinolysis (99+% to less than 1%).

DIC involves widespread intravascular clotting of varying severity, from chronic mild reactions to those causing death. Common causes are (1) introduction of large amounts of tissue thromboplastin into the circulation (i.e. viper snake bites, amniotic fluid embolism, hemolytic transfusion reaction) or (2) widespread disruption of vascular epithelium (i.e. gram negative sepsis associated with shock, some viral infections, heat stroke).

Intravascular coagulation is a strong activator of the clot lysis system (plasminogen plasmin). Plasmin lyses fibrinogen and fibrin to their degradation products and also causes vasodepression through the liberation of bradykinin. The combined processes lead to intravascular coagulation, fibrinolysis and hypertension. Fortunately fibrinogen degradation products have an anticoagulant-like activity and thus often times DIC is self-limiting.

The degradation split products, (X, Y, D and E) are rapidly cleared by the R-E system. They interfere with fibrin polymerization (clotting) by forming soluble complexes with fibrin monomers. Protamine sulfate acts on these complexes, in-vitro, to

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ROY N. BARNETT, M.D., Editor *Laboratory Bulletin*, Norwalk Hospital.

allow spontaneous polymerization of fragment X. This is the basis of the Protamine Paracoagulation test, the best test for the presence of split products. This test is sensitive, and is often positive in conditions with minimal clot lysis such as pulmonary embolism. A laboratory workup for DIC should include (expected findings in DIC).

1. Prothrombin time (prolonged)
2. PTT (prolonged)
3. Thrombin time (prolonged)
4. Platelet count (decreased)
5. Fibrinogen (moderate to marked decrease)
6. Protamine paracoagulation (positive)
7. Euglobulin lysis time (shortened)
8. Blood smear (abnormal red cell forms)

With patients prone to DIC, for example cancer patients on chemotherapy, it is important to have base line data. These patients often have elevated fibrinogen and platelet levels and an episode of DIC would reduce the fibrinogen level and the platelet count but not below the lower limit of the normal range.

Treatment of DIC is aimed at removing the source of thromboplastin and in preventing the conversion of fibrinogen to fibrin by administering heparin. Oral anticoagulants are probably not adequate. Acidosis, which drastically reduces the effects of heparin, should be corrected. Therapy aimed specifically to reduce fibrinolysis is usually contraindicated in DIC, since removal of the fibrinolytic defense mechanism may lead to serious thrombotic complications such as glomerular thrombosis and renal failure.

H. Truax, M.D.

Hyperparathyroidism

Screening of the blood for occult metabolic disorders is a popular enterprise, and ostensibly should yield great benefits in "early" diagnosis of disease before any damage can occur. Williamson & Van Peenen[1] suggest that there may be no such benefits. They screened 4727 adults for high calcium with the following results:

	No.	*%*
Abnormal	155	3.27
Hyperparathyroid	4	0.08
Metastatic ca	18	0.38
Myeloma	3	0.06
Recurrent renal calculi	2	0.04

There was a 0.1% incidence of hyperparathyroidism, about usual for this population. All 4 of these cases had already been diagnosed clinically, as had 2 additional normocalcemic hyperparathyroid patients. Of the 6 total cases:

1 has renal calcinosis. On exploration his parathyroids were normal.

1 refused surgery.

1 was a poor risk and was not operated.

2 were operated and adenomas removed. Their blood calcium returned to normal but pre-existing hypertension remained and they felt no different than before.

This cannot be considered great support for the merits of chemical diagnosis, nor for treating asymptomatic hyperparathyroidism.

[1] Arch Int. Med. *133,* 430-431, 1974.

In Memoriam

Palmieri, Michael W., University of Naples, Italy, 1933. He was a Founding Fellow of the American Academy of Family Practice and a Founder and Past President of the Academy in Connecticut. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society and the American Medical Association. In addition to maintaining a private practice, Doctor Palmieri was a medical director for Albertus Magnus College and a medical examiner in the Redirection Program of the Connecticut Correctional Center. Dr. Palmieri died September 11, 1975, at the age of 70.

Rosenfeld, Joseph E., University of Vienna, 1938. Dr. Rosenfeld was a psychiatrist in the Hartford area since 1954. He was a Major in the U.S. Army from 1943-1946, and a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Rosenfeld died June 18, 1975 at the age of 68.

Silbermann, Salo J., University of Vienna, 1936. He was a practicing neurosurgeon in the Hartford area since 1950. He was a consulting physician at Meriden-Wallingford Hospital and Johnson Memorial, Stafford Springs, and was also on the courtesy staff of Hartford and St. Francis Hospitals. He also served as assistant clinical professor at Yale Medical School and the University of Connecticut medical school. Dr. Silbermann was a member of the Hartford County Medical Association, the Connecticut State Medical Society and the American Medical Association. He died June 30, 1975 at the age of 63.

PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a service to the medical profession in the State of Connecticut. Opportunities for physicians to locate in Connecticut will be published as space permits and will be distributed to physicians making inquiry of such opportunities. Information should be sent to 160 St. Ronan Street, New Haven, Connecticut 06511, (203-865-6822).

Physicians wishing to establish practice in Connecticut are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two consecutive issues of *Connecticut Medicine.*

PHYSICIANS WISHING TO LOCATE IN CONNECTICUT

Anesthesiology: Available now. Board eligible. Just completed duty as anesthesiologist with U.S. Army hospital in Germany. William R. Dudley, M.D., 167 Sea Hill Road, North Branford, CT 06471

Anesthesiology: Available with short notice. Presently in practice. Desires Greater Hartford area. Board eligible. 41 years old. New York Medical College and Boston University Medical Center. Thomas Stammes, M.D., 51 Woodland Road, Andover, MA 01810.

Family Practice: Board eligible. Available June 1976. 28 years old. University of Rochester. University of Miami Family Practice program. Prefers group or associate arrangement in medium sized town. Robert J. Breiman, M.D., 7801 N.E. 4th Court, Miami, FL 33138.

Family Practice: Board eligible. 30 years old. Completing F.P. residency at University of Minnesota. Attended school in Connecticut. Prefers group practice. Available July 1976. Edward P. LaMotta, M.D., St. Paul Ramsey Hospital, Department of Family Practice, 640 Jackson Street, St. Paul, MN 55101.

Family Practice: Board eligible. Available July 1976. 30 years old. University of Rochester and Family Medicine at Duke University, Durham, N.C. Desires medium or small community. Gary W. Lamphere, M.D., 1703 Kirkwood Drive, Durham, N C 22705.

Family Practice: Available January 1976. Presently in practice. 32 years old. Trained in Vancouver, Canada, and in San Diego, California. Marc Trajan, M.D., No. 228-200 East 30th Street, San Bernardino, CA 92404.

Family Practice: Board eligible. 27 years old. Desires small or medium sized community with group or associate type practice. University of Colorado and San Bernardino Medical Center. David L. Wise, M.D., 804 East 16th Street, No. 6-B, San Bernardino, CA 92404.

Internal Medicine (Gastroenterology): Available July 1976. Board certified. Conn. License. Residency at Greenwich Hospital. Completing Fellowship at Manhattan V.A. Hospital. Bernard M. Aaron, M.D., 200 Flower Drive, Lexington Park, MD 20653.

Internal Medicine (Pulmonary): Available July 1976. Certified ABIM. 30 years old. Completing Pulmonary Fellowship at Salt Lake City Medical Center. Vito A. Angelillo, M.D., 1183 South 10th East, Salt Lake City, UT 84105.

Internal Medicine: Available January 1976. Interested in renal, hypertension and electrolyte problems. Presently in practice. Board certified. 30 years old. Solo or group practice in medium sized community. Zaeem Ansari, M.D., Box 728, Margaretville, NY 12455.

Internal Medicine: Available summer of 1976. Temple University and George Washington University Medical Center. Desires group practice in medium or small community. Board eligible. William A. Colom, M.D., 2206 N. Pickett Street, No. 304, Alexandria, VA 22304.

Internal Medicine (Cardiology): Board eligible. FLEX. Completing cardiology fellowship at San Francisco Medical Center. 32 years old. Available June 1976. Richard J. Darling, M.D., 27 Josepha Avenue, San Francisco, CA 94132.

Internal Medicine: Available summer of 1976. Presently chief resident in medicine at V.A. Hospital in Washington, D.C. Board eligible. Desires medium or small town. Richard B. Friedman, M.D., 802 Massachusetts Avenue, N.E., Washington, D.C. 20002.

Internal Medicine (Pulmonary Diseases): Available July 1976. Board certified. Fellow at Kings County Hospital. 27 years old. Desires group or institutional appointment. Dennis Gort, M.D., 822 President Street, No. 4, Brooklyn, NY 11215.

Internal Medicine: Primary care practice in small or medium sized community. Conn. license. Internship and residency done in Connecticut. Board eligible. Available July 1976. Write Bridge, M.D., c/o CSMS.

Internal Medicine (Hematology and Oncology): Board certified. Available July 1976. Solo, group or associate practice. Medium sized community. Fellow at Mayo Clinic. Stephen J. Kaye, M.D., 1522 Graham Court, S.E., Rochester, MN 55901.

Internal Medicine: Board certified. Prefers coastal area. Solo, associate or group practice. Leaving service in March of 1976. 35 years old. Board certified. James D. Levy, M.D., 14009 Eagle Court, Rockville, MD 20853.

Internal Medicine (Gastroenterology): Certified in 1974. Connecticut license. Available July 1, 1976. Presently at Yale as Fellow. John E. Madsen, Jr., M.D., 135 Florence Road, Apt. 2C, Branford, CT 06405.

Internal Medicine: Board eligible. Available July 1, 1976. Presently at New England Deaconess Hospital. Group or associate practice. Craig W. Markert, M.D., 40 St. Paul Street, Brookline, MA 02146.

Internal Medicine: Presently available. Board eligible. Completing training at St. Mary's Hospital, Long Beach, California. Rosario Noto, M.D., 19143 Appletree Court, Cerritos, CA 90701.

Internal Medicine (Cardiology): Presently available. Wishes to relocate in Connecticut. Board eligible. 39 years old. Desires solo or associate practice. Joseph G. Piroch, M.D., Brooks Road, R.D. No. 4, Meadville, PA 16335.

Internal Medicine (Oncology): Diplomate in internal medicine. FLEX. Desires group or associate practice. Completing Fellowship in Hematology at Hahnemann Hospital in Philadelphia. Available July 1976. C.R. Sarker, M.D., 118 B Norristown State Hospital, Norristown, PA 19401.

Internal Medicine (Gastroenterology): Connecticut License. Board eligible. Completing Fellowship at Yale. Group or associate

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practice. Desires to remain in Connecticut. Available now part time. Full time after July 1977. Write J.R., M.D., c/o CSMS.

Internal Medicine (Endocrinology): Board eligible. Available July 1976. Presently Fellow at University of Illinois Hospital, Chicago. 29 years old. I.V. Thakkar, M.D., 1926 W. Harrison Street, Apt. No. 1110, Chicago, IL 60612.

Internal Medicine (Gastroenterology): Board certified. Presently on active duty in U.S. Navy. Available July 1976. Solo, group or associate practice. Harvard Medical and Beth Israel in Boston. 30 years old. Mass. and N.J. licenses. John D. Wojcik, M.D., 100 Denver Avenue, Westmont, N J 08108.

Internal Medicine: Available September 1976. Special interest in liver disease. Johns Hopkins trained. Board eligible. Group or institutional type practice. 29 years old. Theodore G. Rose, Jr., M.D., 1112 Montecito Drive, Los Angeles, CA 90031.

Internal Medicine (Cardiology): AOA, ABIM, 30 years old. Married. Completing Fellowship at N.Y. Hospital-Cornell June 1976. Skilled in invasive and non-invasive techniques. Howard C. Rothman, M.D., 435 East 70th Street, NY 10021.

Internal Medicine (Hemat/Oncol): Board eligible. 47 years old. Group, associate or institutional practice desired. Trained in Indonesian Medical School and at several U.S. Medical Centers including Fellowship at Brookdale Hospital, NY. Frederick S. Tan, M.D., 660 E. 98th St., Apt. 12-H, Brooklyn, NY 11236.

Internal Medicine: General medicine and/or nephrology. Presently in Fellowship program at Westchester City Medical Center. Available July 1976. 33 years old. Ashraf S. Noorani, M.D., 5 Westview Avenue, #2, White Plains, NY 10603.

Internal Medicine (Pulmonary Disease): Available July 1976. 30 years old. Certified in Internal Medicine. University of Michigan trained. Daniel Markowitz, M.D., 785 Skynob Dr., Ann Arbor, MI 48105.

Internal Medicine (General): Available July 1976. 29 years old. Johns Hopkins and St. Louis University. Board eligible. Group or associate practice. Stephen F. Wetherill, M.D., 11955 Charter Oak Parkway, St. Louis, MO 63141.

OB/GYN: Available July 1976. 31 years old. Jr. Fellow ACOG. Group or associate practice. Experienced in laparoscopy, colposcopy and fetal monitoring. Write T.P.M.

Ophthalmology: 30 years old. FLEX. through New York State. Available July 1976. Completing residency at Catholic Medical Center in Brooklyn. G. Dastgir, M.D., 614 Troy Avenue, Brooklyn, NY 11203.

Ophthalmology: 39 years old. Connecticut license. Board eligible. Presently in practice. Available with short notice. Prefers solo practice. Write G.J.G.

Ophthalmology: 33 years old. Board eligible. Available July 1976. Presently a Fellow at Good Samaritan Hospital, Portland, Oregon. Interned at the Albany Medical Center. Group practice. Irvin L. Handelman, M.D., 4445 S.W. 91st, Portland, OR 97225.

Ophthalmology: Connecticut license. Available March 1976. Board eligible. Presently completing residency program in Connecticut. Contact CSMS. S.B.H.

Ophthalmology: 29 years old. Available July 1976. Presently completing residency program at Jefferson Medical College in Philadelphia. Group or associate practice. Alan L. Schein, M.D., 119 Upland Terrace, Bala Cynwyd, PA 19004.

Orthopedics: 32 years old. Available June 1976. Board eligible. Presently in U.S. Navy. Georgetown trained. Write F.P., M.D.

Pathology: Now available. 29 years old. Board eligible. Presently chief resident at DePaul Hospital, St. Louis. First year of residency done at St. Raphael's in New Haven. Nadia O. Metwalli, M.D., 8147 Briarhaven Trail, Apt. 201, St Louis, MO 63123.

OPPORTUNITIES FOR PRACTICE

(If no name is listed, contact the Physician Placement Service for more details.)

Pediatrics: Public Health Medical Consultant for Maternal and Child Health and Crippled Children programs. Contact J.J. Crowly, Personnel Administrator, Connecticut State Department of Health, 79 Elm Street, Hartford, CT. 06115.

Ophthalmology: Five listings presently available in various parts of the state. Contact CSMS for details.

Pediatrics: Opportunity to join active practice in West Haven area. Contact CSMS.

General Surgery: Associate needed by July 1976 in centrally located city. Excellent 300-bed hospital. Write General Surgeon, c/o CSMS.

Psychiatrist: Part-time on in-patient service of exciting new comprehensive alcoholism treatment program. Weekday mornings until 6/30/76. Contact Paul Errera, M.D., V.A. Hospital, West Haven, CT 06516. An equal employment opportunity employer.

Medical Director: Prestigious industrial corporation. Employee health program. Contact Duse Vanden Bosch, Weatherby Associates, 300 Broad Street, Stamford, CT 06901. Plant Physician also needed for petroleum corporation. Southern part of the state.

Family Practice: Town of Bolton, Conn., needs a practitioner. Contact CSMS.

Family Practice: Middlesex County. Excellent opportunity to assume practice. Affiliated with Middlesex Memorial Hospital a few miles away.

OB/GYN: Women's Health Service needs Board eligible or certified physician with Conn. license. 40 to 10 hours per week. Contact Harriet Bograd, 19 Edwards Street, New Haven, CT — 777-4781.

Emergency Room Positions: Contact EMS Department: Middlesex Memorial Hospital, Middletown; Milford Hospital, Milford; World War II Memorial Hospital, Meriden; Wesson Emergency Associates, Springfield, Mass.; Meriden-Wallingford Hospital, Meriden; Charlotte Hungerford Hospital, Torrington.

OB/GYN: Study indicates that community could support new, three man group. Details available. Contact CSMS.

Industrial Medicine: Two West Haven firms need part time coverage. Employment physicals. On call coverage.

Family Physicians: Community could support two physicians. Contact: Mrs. B. Nielson, 132 Main Street, Collinsville, CT—693-2131.

Family Physicians: State Department of Mental Health has several openings. Contact Mr. R. R. Tacey, 90 Washington Street, Hartford, CT—566-4221 or 566-5493.

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Burroughs Wellcome Co. 796
Classified Advertising 827
Colonial Bank and Trust Co. 788
Connecticut Blue Cross 772
David Dean Smith 4
Dentocain Co. 828
Arthur W. Eade, Insurance 826
Elmcrest Psychiatric Institute 800
Endo Laboratories, Inc. 814
Geriatric Pharmaceutical Corp. 782
Eli Lilly & Co. .... FC
Merck Sharp & Dohme .... bet. 828 & 829
Merrill Lynch, Pierce Fenner & Smith, Inc... 784
Pharmaceutical Manufacturers
  Assoc. .... bet. 818 & 819
Physicians Planning Service Corp. 828
Robins, Co., A.H. .... bet. 802 & 803
Roche Laboratories .... 2 & 3, IBC, BC
Roerig & Co. .... bet. 818 & 819
Sanibel Hospital, Inc. 774
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Manuscript Preparation

Copy must be typewritten double-spaced on (8½ x 11-inch) heavy-duty, white, bond paper. This requirement applies to all text elements: references, legends, footnotes, and others. Allow generous margins on each page—at least 1½ inches at top, bottom, and left, and 1 inch at right. Pages should be numbered consecutively.

Length of Articles

Ordinary articles should not exceed 2,500 words (approximately 3 printed pages). Under exceptional circumstances only will articles of more than 4,000 words be published.

Titles and Authors' Names

The first page of the manuscript should include (A) title of paper; (titles should be short, specific, clear, and amenable to indexing. A subtitle is frequently useful in keeping the main title short); (B) name of author(s), including first name(s) and with academic degree(s); (C) List hospital positions for each author and any institutional or other credits. If an author's present affiliation is different from the affiliation under which the work was done, both should be given.

Addenda and appendices are usually not acceptable. If additional data become available before manuscript submission or final author approval, this material should be incorporated into the text.

Abstracts

The second page should contain an abstract of not more than 150 words. This abstract should be factual, not descriptive, and should present the reason for the study, the main findings (give specific data if possible), and the principal conclusions. Do not include a summary.

References

The following minimum data should be typed double-spaced: names of all authors, complete title of the article cited, name of journal abbreviated according to *Index Medicus*, volume number, first and last page numbers, and year of publication. All references must be cited in the text. They should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively. Numbered references to personal communications, unpublished data and "in preparation" are unacceptable. If absolutely essential, such material may be incorporated in the appropriate place in the text or as a footnote.

Tables

Data presented in tables should be self-explanatory and should supplement, not duplicate, the text or figures. Excessive tabular data are discouraged. Each table should by typed double spaced, including all headings, on separate sheets of 8½ x 11-inch paper. Oversize paper should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively with respect to citation in the text. Each table must have a title.

Illustrations

Figures should be professionally drawn and photographed, if possible. Glossy, clear black and white photographs should be submitted.

Line drawings, graphs and charts should be done in India ink on high-grade white drawing paper. Lines should be examined for evenness, breaks, and proper alignment. Lettering and symbols should be clear and of even density throughout. Symbols, lettering, and numbering should be of such proportioned size that when the figure is reduced to *Journal* column width (8 cm) each item will still be distinctly recognizable.

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Each figure should have a label pasted on its back indicating the figure's number, the names of the authors, and the top of the figure. Do not mount the figure on cardboard. Do not write on the backs of figures, nor expose them to paper clips.

If photographs of patients are used, either the subjects should not be identifiable, or their pictures must be accompanied by written permission to use the figure.

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Generic names should be used, but if an author uses a brand name drug in the course of a study, or wishes to use a brand name for other reasons, he may do so, but should insert it (in parentheses) after the generic name.

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Connecticut Medicine
Connecticut State Medical Journal

SUBJECT INDEX

Volume 39 December, 1975

A

Aerotitis (Sasaki and Kent) vii 410
Aetna Life & Casualty, August 1975, Professional Liability Insurance Program of the Connecticut State Medical Society: Fourth Annual Report ix 547
Aircraft Accident Investigation. The June 1971 Crash At East Haven, The Medical Examiner and (Gross) x 653
AMA Board of Trustees, Continuing Competence of Physicians: Progress Report iii 178
AMA, Council on Medical Education, 1975, Essentials of An Approved Educational Program for a Surgeon's Assistant, Report of the viii 493
AMA, Emergency Medical Services and the Emergency Medical Technician, Commission on ix 575
AMA, Fact Sheet, 1975—Representing the Profession x 647
AMA, Information Exchange about Physicians, Report of the Board of Trustees iv 245
AMA, Joint Report of the Council on Medical Education and the Council on Medical Service. Full-Time Program Directors and Chiefs of Service xi 741
AMA, Report of the Council on Medical Service, Medical Staff—Hospital Relations xi 736
AMA, The Physician and the Dying Patient, Report of the Judicial Council viii 514
AMA's Financial Situation, Special Report on the vi 397
Amputation, Early Ambulation After Below-Knee (Kerstein and Dugdale) vi 360
Anaerobic Bacteremia (Wilson with Rosenblatt and Washington) x 597
Annual Awards, Connecticut State Medical Society vii 442
Annual Meeting, Program—183rd iv 265
Annual Nahum Award, Water Used in Artificial Kidneys, James M. Burke, Jr., Second ix 563
Aphasia, The Myth of the Dichotomy of Expressive and Receptive (Duffy) vi 383

B

Bill of Rights, Conceptual Aspects of A Patients' (Margolis) ix 582
Biomedical Research, Report of AMA Board of Trustees, Support of v 321
Blood Transfusion, Jehovah's Witnesses and (Dixon) vii 433
Books Received iii 197
Book Reviews iii 197, vii 452
Breast Cancer, Chemotherapy of (Mitchell) i 4
Breast Cancer, Primary Therapy of Operable (Goldenberg) i 1
Breast Cancer Task Force, National Institutes of Health, HEW, Report to the Profession from the iii 166
Breast Cancer, The Place of Hypophysectomy in the Management of Metastatic (Van Gilder) i 3
British Medicine, An American Look at (Marsh) v 301
Bronchogenic Carcinoma, The Role of Radiation Therapy in (Knowlton and Fischer) v 285

C

Cancer of Unknown Primary, Management of (Fischer) iv 205
Cardiac Care Unit: Analysis of Initial Data, A Mobile Emergency (Anthony and Semeraro) xii 797
Cardiac Pacemakers, Legal Aspects of (Sagall) v 325
Cardiac Transplantation, Lessons from (Harrison) vi 345
Cardiovascular Surgery at a Community Hospital, Six Year Experience in (DelPizzo) xii 759
Charter and Bylaws of the Connecticut State Medical Society x 657
Chest Film Useful? Is A Systematic Annual (Tenret) x 604
Child with Cancer, Management of the (Altman) xi 715
China, Medicine in (Roth) iii 163
China, Physician Education in the People's Republic of (Saward) i 39
Chromosome Analysis in Clinical Medicine (Yoon) iii 145
Clinical Cardiology, Advances in (Cohen) xii 779
Cold Injury: A Review of Current Theories and Their Application to Treatment (Dinep) i 8
Colonoscopy—Preliminary Review of Surgical Applications (Shapiro and Hoffer) i 6
Commencement Address (Berliner) iii 159
Confidentiality Statutes, The Connecticut (Marcy) ii 108
Connecticut and its Cancer Center Regional Activities (Mandel) xi 721
Connecticut Cancer Epidemiology Unit (Meigs) x 637
Connecticut Emergency Departments: Responsibility of Registered Nurses or Physicians, Patient Care Tasks in (Webb, Jr. and Starr) i 30
Connecticut Medical Institute, Report on (Kenney) i 57

D

Dead, Is He? Should He Be Allowed To Die? Who Decides? (Tibbles) xi 731
Dean's Office, Reflections From i 16, ii 95, iii 156, iv 223, v 297, vi 364, vii 416, viii 476, ix 540, x 616, xi 700, xii 783
Dental Caries, Prescribing Fluoride Supplements to Reduce (Mellion and Mellion) ii 84
DES: Its Uses and Effects as Contraceptive and Additive (Rauscher) vii 439
Diabetic Foot: Surgical Considerations, Salvage of the (Darling) vi 354
Diabetic Foot Problems, Role of the Podiatrist in the Management of (Anastasio) vi 357
Digital Replantation and Microsurgical Methods (Finseth with Flagg, Baker, Frazier and Krizek) vii 402
Doctors Versus the Lawyers (Allen) ii 112
Dressings, Rigid: Poor Results (Kerstein with Zimmer and Dugdale) xi 690
Drug Information Service, University of Connecticut Health Center vi 407

Due Process—From A Practicing Physician's Viewpoint (Fabro) ... iv 243
Due Process in Hearings on Staff Privileges (Hedgepeth) ... iv 241
Duodenum, Villous Adenomas and Malignant Villous Tumors of the (Dwyer with O'Brien and Maio) ... v 286

E

Ear, Barotrauma of the Inner (Sasaki with Bell and Levine) ... iv 214
Editor, Report of J. Alfred Fabro, Annual Meeting House of Delegates, Editorial Committee of Connecticut Medicine ... viii 479
Educational Seduction, Doctor Fox Lecture: A Paradigm of (Naftulin with Ware and Donnelly) ... ix 559
Ethics and Social Science Research (Halper) ... vii 230
Executive Director's Office, From the ... i 60, ii 127, iii 191, iv 271, v 335, vi 404, vii 451, viii 518, ix 588, x 675, xi 747, xii 819

EDITORIALS:
- AMA and Dues ... i 18
- AMA Dues ... xi 703
- Bacteriology, Towards Better ... viii 478
- Boston-Edelin Case, The ... vi 366
- Breast Cancer, The Challenge of ... i 17
- Cardiac Arrest, Defibrillation First, CPR—Second in ... x 618
- Care, Use of Extended ... ix 545
- Child Care, Partnerships in Pediatric Graduate Education and ... xi 701
- Child—Physicians' Obligations, The Abused ... vii 418
- Clinical Relevancy Revisited ... ix 546
- Commitment, A Time for ... ii 92
- Community Hospitals—1975, Surgical Learning in ... ix 543
- Digital Replantation—A Fact Not a Fancy ... vii 417
- Echocardiography ... v 300
- EMS—The Politics of Saving Lives ... ix 543
- FDA, Alexander M. Schmidt, M.D. and the ... v 300
- Forrester's Law ... vi 367
- Human Inhumanity ... iv 225
- Life Saver—Time Saver ... i 17
- Lung Cancer—1975 ... v 299
- Malpractice Mess ... iv 226
- Malpractice Panel Reviews—A Suggestion ... vi 365
- Malpractice Update—Quo Vadis?—Arbitration ... x 619
- Medicine in the Boondocks ... i 19
- Mentally Ill Minors, "Voluntary" Admission of ... x 617
- Pediatrician, of the Future ... ii 91
- Physician's Assistant Programs, Accreditation for ... viii 477
- PSRO and the Privacy Act: Progress in Confidentiality Guarantees ... xi 702
- PSROs ... xii 786
- Synopsis-Abstract, On Writing the ... ii 92
- Title XX: A Major Threat to Privacy and a Setback for Informed Consent ... xii 786
- Tuberculosis, Prevention of ... x 618

F

FDA, The Drug Approval Process and the (Schmidt) ... iv 237
Finger, Salvage of an Amputated Index, Utilizing Microsurgical Techniques (Singer) ... vii 401
Fractures, Treatment of Pathological (Friedlaender with Johnson, Brand and Southwick) ... xii 765

G

Glomerulonephritis, Serum Complement in the Evaluation of (McLean) ... xi 711
Gonorrhea, Recommended Treatment Schedules, HEW, Public Health Service (Center for Disease Control) ... i 11
Government and the University (Brewster) ... ix 555

H

Healing Professions, Advocacy and Corruption in the (Lifton) ... xii 803
Health Education: Moving to Center Stage (Levin) ... x 631
Health Laws, Thirty-eight National, 1968-1973 ... i 29
Health Planning and Resources Development Act of 1974, The National (Hess) ... v 309
Hepatic Coma, An Anephric Patient In: A New Role for Hemodialysis (Dubay and Izard) ... xi 692
Hepatic Dysfunction, Current Concepts of Postoperative (LaMont and Isselbacher) ... viii 461
Hernia Repair, Inguinal (Welsh) ... ii 74
Hodgkin's Disease in the 70's, Evaluation and Treatment of (Einhorn) ... xi 694
Home Care—An Effective Alternative (Adams) ... iv 257
Hospital Governing Board and Medical Staff Relationships (Anderson) ... i 24
House of Delegates, Summary of Proceedings, Semi-Annual Meeting, Annual Meeting ... i 53, vii 443
House Staff Training, Current Trends in (Vietzke) ... ii 122
Human Beings—Values in Conflict, Experimentation with (Katz) ... vi 375
Human Experimentation, Humanism in, Some Notes of the Investigator's Fiduciary Role (Pellegrino) ... ii 97
Human-Semen Banking: Implications for Medicine and Society (Frankel) ... v 313
Hypercholesterolemia and Hypertriglyceridemia, Diagnosis and Treatment of (Scheig) ... ii 71
Hypertension and the Connecticut High Blood Pressure Program, The Case for Treating (Ostfeld and D'Atri) ... v 306
Hypoglycemic Agents, Oral (Felig) ... xi 704
Hypoglycemic Drug Therapy, Guidelines for the Use of Oral, The Balance of Risks Versus Benefits (Poffenbarger and White) ... iii 137

I

Ileostomy, The Continent, Quality of Life (King) ... ix 523
Immunology, Tumor (Mitchell) ... ix 536
Immunology, Understanding Modern: I. The Development of the Human Immune System (Dwyer) ... iii 170
Immunology, Understanding Modern: II. The Anatomy and Functions of the Immune System (Dwyer) ... iv 216
Immunotherapy of Solid Tumors (Mitchell) ... x 601
Infant Cardiac Program, Regional (Chameides with Galioto and Fyler) ... xi 707

L

Laboratory Notes (Barnett) ... ii 125, xii 823
Larynx, Acute Trauma of the (Hicks) ... xi 686
Leukemia Patient, Management of the Acute (Wiernik) ... xi 681
Licensure Jungle at Last, Out of the (Derbyshire) ... iii 185
Lung Cancer (Stern and Toole) ... v 279
Lung Cancer, Chemotherapy of (Marsh) ... v 283

Lung Cancer, The Importance of Pathology for Prognosis and Management in (Yesner) v 280
Lung Scan, Repeated "Rapid Resolution" of Segmental Defect on Perfusion (Puri and Spencer) ii 86

LETTERS TO THE EDITOR:
Ballantine, H. Thomas, Jr. x 622
Brown, Paul W. x 621
Burbank, John viii 483
Chapman, Earle M. iii 162
Dignam, Bernard S. vi 368, x 622
Donnelly, John i 21, ii 94
Fitzmaurice, Sister MaryAnne xi 706
Frankel, Mark S. viii 483
Haugh, John D. x 622
Healey, James C. i 21
Hirakis, Sarah S. iv 227, vi 369
Hiscock, Ira V vii 419
Horan, Anthony H. viii 483
Kraus, George iii 162, vi 368
Krizek, Thomas J x 621
McGarry, John J. ii 94
Meyer, John L. vi 368
Nagaraja, Urabagilu xi 706
Nemoitin, Bernard O. xi 706
Ormrod, J. Kenneth T x 622
Pasquariello, D. W. vii 418
Polayes, Irving M. x 621
Roth, Oscar iii 161
Schloss, Walter A. xii 791
Schmidt, Alexander M x 622
Schweizer, Robert T. iv 226
Singer, Joel B x 621
Wallach, Gert iii 161
Wolfson, Herman iv 227
Wright, John C x 622
Zurier, Robert B. viii 483

M

Malpractice Cases, Defending (Harkins) ii 115, iv 250
Malpractice Insurance Crisis, Public Holds Doctors Liable for ix 553
Malpractice: Where Is It Taking Us? (Egeberg) viii 481
Maternity Departments Be Closed? Should Small Rural Community (Nagaraja) viii 507
Medical Malpractice, California Legislative Report ii 105
Medical Planning, Report to the Council, Committee on Statewide iv 259
Medical Society, Expulsion From (Holder) iii 175
Medicine and Pragmatism in William James (Romanell) ix 577
Meningeal Leukemia, Treatment of, Cytosine Arabinoside and Cranial Irradiation in the (Grant and De Palma) x 608
Mental Health Care—The Situation of the Adolescent, Rights in (Beyer) x 643
Methyldopa, Delayed Hepatotoxicity From, (Sataline and Lowell) xii 775
Microbiology Laboratory Utilization, State of Connecticut, Department of Health, Report of the Ad Hoc Committee on Medical (Bartlett) viii 499
Must A Patient Be A "Person" To Be A Patient (Hauerwas) xii 815

MEMORIAM, IN:
Anderson, James T. vii 456
Audet, Charles H., Sr i 65
Baker, Asher L vii 456
Ballard, Claude J. xi 750
Burke, Joseph F. xi 750
Cameron, Norman A. xi 751
Clancy, John J. ii 131
Cleary, Harold J. v 340
Colwell, Howard S ii 131
Comodo, Nicholas ix 591
deCholnoky, Tibor ix 591
Douglass, Edmund L. v 340
Earle, B. Baylis xi 751
Finley, George C vi 409
Goff, Charles W. vii 456
Golston, Harry xi 751
Groark, Joseph A. xi 751
Hagedorn, Maxwell E. i 65
Hastings, Louis P i 65
Hendel, Isidore vii 456
Hillman, Maurice M. ix 591
Hogan, Walter L xi 751
Howard, Albert J xi 751
Howard, Harold xi 751
Isenman, Robert vi 409
Katzenstein, Rolf E. vii 456
Kearney, Maurice W. xi 751
Kunkel, F. Earle vi 409
Laakso, Andrew O. i 65
Landry, Arthur B. ix 591
Landry, Benedict B. ii 131
Margold, Allen M iii 201
Monahan, David T. vi 409
Nodelman, Jacob ix 591
O'Brasky, George H i 65
O'Connell, John F. xi 751
Oelschlegel, Herbert C. xi 751
Ogden, Ralph T. xi 751
Osborn, Stanley H. ix 591
Palmieri, Michael W. xii 824
Paul, Francis ii 131
Polito, Frank L vi 409
Robinson, Albert J. ii 131
Roland, Menelick L. vii 456
Rosenfeld, Joseph E xii 824
Ryan, Francis J. ix 591
Semmelmeyer, John Albert, III ii 131
Silbermann, Salo J xii 824
Simmons, Eric M iii 201
Smith, Harold ii 131
Solomon, Charles I. vii 456
Spence, James K. iii 201
Steinmayer, Otto C., Jr. v 340
Sutula, Stanley, Jr. iii 201
Thenebe, Carl L. ii 131
Tinkess, Donald E. ii 131
Tisher, Paul W. ii 131
Vastola, Anthony P. ix 591
Winer, Paul ix 591

N

National Health Service Corps (Martin) iii 189
Nephrotic Syndrome, Factor IX Deficiency in the (Koshy with Kashgarian and Boreyko) viii 472
Neurosurgeon's Response to the U.S. Mental Health Review of Psychosurgery (Scoville) iv 235
New Members of the State Society ii 121, 126, iii 7, 192, iv 274, vi 392, 402, xii 822
Notices ii 104, iii 169, viii 510, ix 587, xi 705, 746
Nuclear Medicine Procedures, Evaluation of "Emergency" (Witek with Banerji and Spencer) vii 409

O

Obstetric and Pediatric Care, Suggestions for Minimal ix 558
Occupational Medicine, Uses of the Epidemiologic Method in (Bernacki) ii 117
Officers of the Connecticut State Medical Society vi 369
Open Information and Medical Care: A Proposal for Reform (Shenkin and Warner) i 33
Organ Transplantation, A Review of Human Solid (Bergan) viii 511
Organ Transplants Via the Oral Route? Modern Age Cannibalism (Neumann) v 319
Ostomates, The Psychological Problems of (McCawley with Mannix, Jr. and McCarthy) iii 151

OBITUARIES:
- Goldstein, Max R. i 64
- Laakso, Andrew O. iii 201
- Roch, George E. xi 750
- Tisher, Paul Winslow v 340
- Wiedman, Otto G. i 64

P

Paget's Disease of Bone, Cardiovascular Complications of, Effects of Mithramycin and Calcitonin in (Pembrook with Chung and Carvallo) iv 209
Pancreaticocolic Fistula (Carrillo and Strauch) ix 530
Perinatal Morbidity and Mortality Committee (Lattanzi) iv 219
Physician, Characteristics of the Good (Sanchez) x 649
Physician Placement Service i 68, ii 134, iii 200, iv 275, 276, v 342, vi 408, vii 458, viii 521, ix, 594, x 672, xi 757, xii 825
Physicians in Connecticut by Comprehensive Health Planning Area and Individual and Contiguous Towns, Distribution of, 1973 (Hirakis and Armondino) i 43
Podiatry and Medicine, The Interface Between (Yale) vi 377
President, Address of the vii 446
President, Incoming, Inaugural Address of the vii 447
President's Page, The i 15, ii 89, iii 157, iv 221, v 296, vi 363, vii 415, viii 475, ix 541, x 615, xi 699, xii 781
President, Report of the i 56
Primary Care Task Force—Interim Report (Wetstone) x 623
Prisons, Human Research in Connecticut (DeRiemer) vi 387
Professional Liability Problem (Todd) iv 249
PSROs—What Do They Mean To The Lawyer? (Zimmerly and White) xi 725
PSROs in Connecticut—Past, Present, and Future (Root) xii 793
Professional Standards Review Organizations and the Quality of Health Care (Simmons) vi 371
Prostatic Carcinoma, Sequential Cryotherapy for, Does it Palliate the Bone Pain? (Horan) ii 81
Prostatitis and Infertility, The Bacteriology of (Horan) vii 407
Psychosurgery: Perspective on a Current Issue (Brown with Wienckowski and Bivens) iv 228

Q

Quality Assurance Programs, A Monitoring Strategy for (Webb with Robson and Lanckton) iv 253

R

Renal Transplantation, Current Problems in (Lytton and Schiff, Jr.) ii 78
Respiratory Control of the Heartbeat, The First Louis H. Nahum Lecture, (First of Two Parts), (Second of Two Parts) (Hoff with Campbell and Deavers) vii 421, viii 485
Reye's Syndrome Treated by Hemodialysis (Gelfman with Kranwinkel, Pezzimenti, Kotch, Dean and Smith) vii 405
Rheumatoid Disease, An Overview (Zurier) vi 348

S

Sickle Cell Hematuria, Controlled by Epsilon Aminocaproic Acid (Grant and Horowitz) xii 777
Shigellosis Therapy, Abstract by (Weissmain, Gangarosa, DuPont, Nelson and Haltalin) vii 413
Skull Fracture Patients: Minimum Standards and Physician's Performance, Emergency Department Testing of (Robson with Webb and Lanckton) v 290
Spina Bifida Center, Yale-New Haven Hospital: Introduction of the Pediatric Nurse Practitioner in a Program of Comprehensive Management (Venes and Rodgers) xii 801
Spleen, Should We Attempt to Salvage the Injured (Strauch) ix 533
Student Members Elected i 61
Surgeons and Wound Management: Historical Aspects (Wagensteen) ix 568

T

Tetanus, Post-Abortal (Newman with Jacobs and Roberts) xii 773
Theft Insurance, Stealing a Look at Your (Degener) vi 393
Thyrotoxicosis, Hyperparathyroidism and Cushing's Syndrome: An Endocrinologist Scans the Perioperative Period (Robin) ix 526
Tobacco Smoke on Indoor Atmosphere, The Influence of (Schmeltz, Hoffman and Wynder) (Abstract by Edward J. Bernacki) vii 440
Tracheal Reconstruction, Respiratory Failure After, A Hopeful Note (Bull and Strauch) iii 143

U

UConn Health Center Drug Information x 651

V

Varicose Veins, Surgery and Sclerotherapy in the Treatment of (Alderman) viii 467
Vitamin C—A Review and Reassessment of Pharmacological and Therapeutic Uses (Riccitelli) x 609

W

Washington, Month in xii 789
Woman's Auxiliary i 66, v 341, vii 457, x 679

X

Xenodochium for Apollo in the Temple of Asclepius, A (Spicker) i 35
Xeromammography at a Community Hospital, A Year's Experience (Heimann with Karns and Snyder) viii 465

..AUTHORS' INDEX..

Volume 39 December, 1975

A

Adams, Frances W.
  Home Care—An Effective Alternative iv 257
Alderman, Donald B.
  Varicose Veins, Surgery and Sclerotherapy in the Treatment of viii 467
Allen, Allen D.
  Doctors Versus the Lawyers ii 112
Altman, Arnold J.
  Child with Cancer, Management of the xi 715
Anastasio, Andrew S.
  Diabetic Foot Problems, Role of the Podiatrist in the Management of vi 357
Anderson, Betty Jane
  Hospital Governing Board and Medical Staff Relationships i 24
Anthony, Joseph Robert (with Semeraro)
  Cardiac Care Unit: Analysis of Initial Data, A Mobile Emergency xii 797
Armondino, Norman L. (with Hirakis)
  Physicians in Connecticut by Comprehensive Health Planning Area and Individual and Contiguous Towns, Distribution of, 1973 i 43

B

Baker, Graeme C. (with Finseth, Flagg, Frazier and Krizek)
  Digital Replantation and Microsurgical Methods vii 402
Banerji, Julian (with Witek and Spencer)
  Nuclear Medicine Procedures, Evaluation of "Emergency" vii 409
Barnett, Roy N.
  Laboratory Notes ii 125, xii 823
Bartlett, Raymond C.
  Microbiology Laboratory Utilization, State of Connecticut, Department of Health, Report of the Ad Hoc Committee on Medical viii 499
Bell, Douglas (with Sasaki and Levine)
  Ear, Barotrauma of the Inner iv 214
Bergan, John J.
  Organ Transplantation, A Review of Human Solid viii 511
Berliner, Robert W.
  Commencement Address iii 159
Bernacki, Edward J.
  Occupational Medicine, Uses of the Epidemiologic Method in ii 117
Beyer, Henry A.
  Mental Health Care—The Situation of the Adolescent, Rights in x 643
Bivens, Lyle W. (with Brown and Wienckowski)
  Psychosurgery: Perspective on a Current Issue iv 228
Boreyko, Christopher (with Koshy and Kashgarian)
  Nephrotic Syndrome, Factor IX Deficiency in the viii 472
Brand, Richard A. (with Friedlaender, Johnson and Southwick)
  Fractures, Treatment of Pathological xii 765
Brewster, Kingman, Jr.
  Government and the University ix 555
Brown, Bertram S. (with Wienckowski and Bivens)
  Psychosurgery: Perspective on a Current Issue iv 228
Bull, Sherman M. (with Strauch)
  Tracheal Reconstruction, Respiratory Failure After, A Hopeful Note iii 143

C

Campbell, Bonnalie O. (with Hoff and Deavers)
  Respiratory Control of the Heartbeat, The First Louis H. Nahum Lecture, (First of Two Parts) (Second of Two Parts) vii 421, viii 485
Carrillo, Robert P. (with Strauch)
  Pancreaticocolic Fistula ix 530
Carvallo, Alejandro P. (with Pembrook and Chung)
  Paget's Disease of Bone, Cardiovascular Complications of, Effects of Mithramycin and Calcitonin in iv 209
Chameidies, Leon (with Galioto and Fyler)
  Infant Cardiac Program, Regional xi 707
Chung, Chu Ho (with Pembrook and Carvallo)
  Paget's Disease of Bone, Cardiovascular Complications of, Effects of Mithramycin and Calcitonin in iv 209
Cohen, Lawrence S.
  Clinical Cardiology, Advances in xii 779

D

Darling, R. Clement
  Diabetic Foot: Surgical Considerations, Salvage of the vi 354
D'Atri, David (with Ostfeld)
  Hypertension and the Connecticut High Blood Pressure Program, The Case for Treating v 306
Dean, Lila P. (with Gelfman, Kranwinkel, Pezzimenti, Kotch and Smith)
  Reye's Syndrome Treated by Hemodialysis vii 405
Deavers, Stephanie (with Hoff and Campbell)
  Respiratory Control of the Heartbeat, The First Louis H. Nahum Lecture, (First of Two Parts) (Second of Two Parts) vii 421, viii 485
Degener, Jo
  Theft Insurance, Stealing a Look at Your vi 393
DelPizzo, Alphonse
  Cardiovascular Surgery at a Community Hospital, Six Year Experience in xii 759
De Palma, Nicholas (with Grant)
  Meningeal Leukemia, Treatment of, Cytosine Arabinoside and Cranial Irradiation in the x 608
Derbyshire, Robert C.
  Licensure Jungle at Last, Out of the iii 185
DeRiemer, Thomas A.
  Prisons, Human Research in Connecticut vi 387
Dinep, Martin
  Cold Injury: A Review of Current Theories and Their Application to Treatment i 8
Dixon, J. Lowell
  Blood Transfusion, Jehovah's Witnesses and vii 433

Donnelly, Frank A. (with Naftulin and Ware)
Educational Seduction, Doctor Fox Lecture: A Paradigm of ... ix 559

Dubay, Mark (with Izard)
Hepatic Coma, An Anephric Patient In: A New Role for Hemodialysis ... xi 692

Duffy, Robert J.
Aphasia, The Myth of the Dichotomy of Expressive and Receptive ... vi 383

Dugdale, Frederick (with Kerstein)
Amputation, Early Ambulation After Below-Knee ... vi 360

Dugdale, Frederick E. (with Kerstein and Zimmer)
Dressings, Rigid: Poor Results ... xi 690

DuPont, H. L. (with Weissman, Gangarosa, Nelson and Haltalin)
Shigellosis Therapy, Abstract by ... vii 413

Dwyer, John M.
Immunology, Understanding Modern: I. The Development of the Human Immune System ... iii 170

Dwyer, John M.
Immunology, Understanding Modern: II. The Anatomy and Functions of the Immune System ... iv 216

Dwyer, William A. (with O'Brien and Maio)
Duodenum, Villous Adenomas and Malignant Villous Tumors of the ... v 286

E

Egeberg, Roger O.
Malpractice: Where Is It Taking Us? ... viii 481

Einhorn, Lawrence H.
Hodgkin's Disease of the 70's, Evaluation and Treatment of ... xi 694

F

Fabro, J. Alfred
Due Process—From A Practicing Physician's Viewpoint ... iv 243

Felig, Philip
Hypoglycemic Agents, Oral ... xi 704

Finseth, Frederick (with Flagg, Baker, Frazier and Krizek)
Digital Replantation and Microsurgical Methods ... vii 402

Fischer, David S.
Cancer of Unknown Primary, Management of ... iv 205

Fischer, James J. (with Knowlton)
Bronchogenic Carcinoma, The Role of Radiation Therapy in ... v 285

Flagg, Stephen V. (with Finseth, Baker, Frazier and Krizek)
Digital Replantation and Microsurgical Methods ... vii 402

Frankel, Mark S.
Human-Semen Banking: Implications for Medicine and Society ... v 313

Frazier, William H. (with Finseth, Flagg, Baker and Krizek)
Digital Replantation and Microsurgical Methods ... vii 402

Friedlaender, Gary E. (with Johnson, Brand and Southwick)
Fractures, Treatment of Pathological ... xii 765

Fyler, Donald C. (with Chameidies and Galioto)
Infant Cardiac Program, Regional ... xi 707

G

Galioto, Frank (with Chameides and Fyler)
Infant Cardiac Program, Regional ... xi 707

Gangarosa, E. J. (with Weissman, DuPont, Nelson and Haltalin)
Shigellosis Therapy, Abstract by ... vii 413

Gelfman, Nelson A. (with Kranwinkel, Pezzimenti, Kotch, Dean and Smith)
Reye's Syndrome Treated by Hemodialysis ... vii 405

Goldenberg, Ira S.
Breast Cancer, Primary Therapy of Operable ... i 1

Grant, Morton D. (with De Palma)
Meningeal Leukemia, Treatment of, Cytosine Arabinoside and Cranial Irradiation in the ... x 608

Grant, Morton D. (with Horowitz)
Sickle Cell Hematuria, Controlled by Epsilon Aminocaproic Acid ... xii 777

Gross, Elliot M.
Aircraft Accident Investigation. The June 1971 Crash at East Haven, The Medical Examiner and ... x 653

H

Halper, Thomas
Ethics and Social Science Research ... vii 430

Haltalin, K. L. (with Weissman, Gangarosa, DuPont and Nelson)
Shigellosis Therapy, Abstract by ... vii 413

Harkins, James A.
Malpractice Cases, Defending ... ii 115, iv 250

Harrison, Donald C.
Cardiac Transplantation, Lessons from ... vi 345

Hauerwas, Stanley
Must A Patient Be A "Person" To Be A Patient ... xii 815

Hedgepeth, Jay H.
Due Process in Hearings on Staff Privileges ... iv 241

Heimann, Walter G. (with Karns and Snyder)
Xeromammography at a Community Hospital, A Year's Experience ... viii 465

Hess, Orvan W.
Health Planning and Resources Development Act of 1974, The National ... v 309

Hicks, George W.
Larynx, Acute Trauma of the ... xi 686

Hirakis, Sarah S. (with Armondino)
Physicians in Connecticut by Comprehensive Health Planning Area and Individual and Contiguous Towns, Distribution of, 1973 ... i 43

Hoff, Hebbel E. (with Campbell and Deavers)
Respiratory Control of the Heartbeat, The First Louis H. Nahum Lecture, (First of Two Parts) (Second of Two Parts) ... vii 421, viii 485

Hoffer, John M. (with Shapiro)
Colonoscopy—Preliminary Review of Surgical Applications ... i 6

Hoffman, D. (with Schmeltz and Wynder)
Tobacco Smoke on Indoor Atmosphere, The Influence of ... vii 440

Holder, Angela Roddey
Medical Society, Expulsion from ... iii 175

Horan, Anthony H.
Prostatic Carcinoma, Sequential Cryotherapy for, Does It Palliate the Bone Pain? ... ii 81

Horan, Anthony H.
Prostatitis and Infertility, The Bacteriology of ... vii 407

Horowitz, Herbert I. (with Grant)
Sickle Cell Hematuria, Controlled by Epsilon Aminocaproic Acid ... xii 777

I

Isselbacher, Kurt J. (with LaMont)
Hepatic Dysfunction, Current Concepts of Postoperative ... viii 461

Izard, Mark (with Dubay)
Hepatic Coma, An Anephric Patient In: A New Role for Hemodialysis ... xi 692

J

Jacobs, Carol (with Newman and Roberts)
Tetanus, Post-Abortal .... xii 773
Johnson, Rollin M. (with Friedlaender, Brand and Southwick)
Fractures, Treatment of Pathological .... xii 765

K

Karns, Robert E. (with Heimann and Snyder)
Xeromammography at a Community Hospital, A Year's Experience .... viii 465
Kashgarian, Michael (with Koshy and Boreyko)
Nephrotic Syndrome, Factor IX Deficiency in the .... viii 472
Katz, Jay
Human Beings—Values in Conflict, Experimentation with .... vi 375
Kenney, James D.
Connecticut Medical Institute, Report on .... i 57
Kent, Donald (with Sasaki)
Aerotitis .... vii 410
Kerstein, Morris D. (with Dugdale)
Amputation, Early Ambulation After Below-Knee .... vi 360
Kerstein, Morris D. (with Zimmer and Dugdale)
Dressings, Rigid: Poor Results .... xi 690
King, Stewart A.
Ileostomy, The Continent, Quality of Life .... ix 523
Knowlton, Arthur H. (with Fischer)
Bronchogenic Carcinoma, The Role of Radiation Therapy in .... v 285
Koshy, M. C. (with Kashgarian and Boreyko)
Nephrotic Syndrome, Factor IX Deficiency in the .... viii 472
Kotch, Philip I. (with Gelfman, Kranwinkel, Pezzimenti, Dean and Smith)
Reye's Syndrome Treated by Hemodialysis .... vii 405
Kranwinkel, Ramon N. (with Gelfman, Pezzimenti, Kotch, Dean and Smith)
Reye's Syndrome Treated by Hemodialysis .... vii 405
Krizek, Thomas J. (with Finseth, Flagg, Baker and Frazier)
Digital Replantation and Microsurgical Methods .... vii 402

L

LaMont, J. Thomas (with Isselbacher)
Hepatic Dysfunction, Current Concepts of Postoperative .... viii 461
Lanckton, Arthur L. (with Robson and Webb)
Skull Fracture Patients: Minimum Standards and Physician's Performance, Emergency Department Testing of .... v 290
Lanckton, Arthur L. (with Webb and Robson)
Quality Assurance Programs, A Monitoring Strategy for iv 253
Lattanzi, William E.
Perinatal Morbidity and Mortality Committee .... iv 219
Levin, Lowell S.
Health Education: Moving to Center Stage .... x 631
Levine, Paul (with Sasaki and Bell)
Ear, Barotrauma of the Inner .... iv 214
Lifton, Robert Jay
Healing Professions, Advocacy and Corruption in the xii 803
Lowell, David (with Sataline)
Methyldopa, Delayed Hepatotoxicity From .... xii 775
Lytton, Bernard (with Schiff, Jr.)
Renal Transplantation, Current Problems in .... ii 78

M

Maio, Theodora (with Dwyer and O'Brien)
Duodenum, Villous Adenomas and Malignant Villous Tumors of the .... v 286
Mandel, Henry R.
Connecticut and its Cancer Center Regional Activities .... xi 721
Mannix, Henry Jr. (with McCawley and McCarthy)
Ostomates, The Psychological Problems of .... iii 151
Marcy, Sherry E.
Confidentiality Statutes, The Connecticut .... ii 108
Margolis, Joseph
Bill of Rights, Conceptual Aspects of a Patients' .... ix 582
Marsh, John C.
British Medicine, An American Look at .... v 301
Marsh, John C.
Lung Cancer, Chemotherapy of .... v 283
Martin, Edward D.
National Health Service Corps .... iii 189
Meigs, J. Wister
Connecticut Cancer Epidemiology Unit .... x 637
Mellion, Gilbert LeVine (with Mellion)
Dental Caries, Prescribing Fluoride Supplements to Reduce .... ii 84
Mellion, Ruth Berman (with Mellion)
Dental Caries, Prescribing Fluoride Supplements to Reduce .... ii 84
Mitchell, Malcolm S.
Breast Cancer, Chemotherapy of .... i 4
Mitchell, Malcolm S.
Immunology, Tumor .... ix 536
Mitchell, Malcolm S.
Immunotherapy of Solid Tumors .... x 601

Mc

McCarthy, Dorothy D. (with McCawley and Mannix, Jr.)
Ostomates, The Psychological Problems of .... iii 151
McCawley, Austin (with Mannix, Jr. and McCarthy)
Ostomates, The Psychological Problems of .... iii 151
McLean, Robert H.
Glomerulonephritis, Serum Complement in the Evaluation of .... xi 711

N

Naftulin, Donald H. (with Ware and Donnelly)
Educational Seduction, Doctor Fox Lecture: A Paradigm of .... ix 559
Nagaraja, Urabagilu
Maternity Departments Be Closed, Should Small Rural Community? .... viii 507
Nelson, J. D. (with Weissman, Gangarosa, DuPont and Haltalin)
Shigellosis Therapy, Abstract by .... vii 413
Neumann, Hans H.
Organ Transplants Via the Oral Route? Modern Age Cannibalism .... v 319
Newman, Cyril (with Jacobs and Roberts)
Tetanus, Post-Abortal .... xii 773

O

O'Brien, Richard (with Dwyer and Maio)
Duodenum, Villous Adenomas and Malignant Villous Tumors of the .... v 286

- Ostfeld, Adrian M. (with D'Atri)
  - Hypertension and the Connecticut High Blood Pressure Program, The Case for Treating v 306

P

- Pellegrino, Edmund D.
  - Human Experimentation, Humanism in, Some Notes of the Investigator's Fiduciary Role ii 97
- Pembrook, Richard C. (with Chung and Carvallo)
  - Paget's Disease of Bone, Cardiovascular Complications of, Effects of Mithramycin and Calcitonin in iv 209
- Pezzimenti, John F. (with Gelfman, Kranwinkel, Kotch, Dean and Smith)
  - Reye's Syndrome Treated by Hemodialysis vii 405
- Poffenbarger, Phillip L. (with White)
  - Hypoglycemic Drug Therapy, Guidelines for the Use of Oral, The Balance of Risks Versus Benefits iii 137
- Puri, Savita (with Spencer)
  - Lung Scan, Repeated "Rapid Resolution" of Segmental Defect on Perfusion ii 86

R

- Rauscher, Frank J., Jr.
  - DES: Its Uses and Effects as Contraceptive and Additive vii 439
- Riccitelli, M. L.
  - Vitamin C—A Review and Reassessment of Pharmacological and Therapeutic Uses x 609
- Roberts, Brenda (with Newman and Jacobs)
  - Tetanus, Post-Abortal xii 773
- Robin, Noel I.
  - Thyrotoxicosis, Hyperparathyroidism and Cushing's Syndrome: An Endocrinologist Scans the Perioperative Period ix 526
- Robson, Martin C. (with Webb and Lanckton)
  - Quality Assurance Programs, A Monitoring Strategy for iv 253
- Robson, Martin C. (with Webb and Lanckton)
  - Skull Fracture Patients: Minimum Standards and Physician's Performance, Emergency Department Testing of v 290
- Rodgers, Beckett (with Venes)
  - Spina Bifida Center: Yale-New Haven Hospital, Introduction of the Pediatric Nurse Practitioner in a Program of Comprehensive Management xii 801
- Romanell, Patrick
  - Medicine and Pragmatism in William James ix 577
- Root, James H., Jr.
  - PSROs in Connecticut—Past, Present, and Future xii 793
- Rosenblatt, Jon E. (with Wilson and Washington)
  - Anaerobic Bacteremia x 597
- Roth, Russell B.
  - China, Medicine in iii 163

S

- Sagall, Elliot L.
  - Cardiac Pacemakers, Legal Aspects of v 325
- Sanchez, Rafael C.
  - Physician, Characteristics of the Good x 649
- Sasaki, Clarence T. (with Bell and Levine)
  - Ear, Barotrauma of the Inner iv 214
- Sasaki, Clarence T. (with Kent)
  - Aerotitis vii 410
- Sataline, Lee (with Lowell)
  - Methyldopa, Delayed Hepatotoxicity From xii 775
- Saward, Ernest W.
  - China, Physician Education in the People's Republic of i 39
- Scheig, Robert
  - Hypercholesterolemia and Hypertriglyceridemia, Diagnosis and Treatment of ii 71
- Schiff, Martin Jr. (with Lytton)
  - Renal Transplantation, Current Problems in ii 78
- Schmeltz, I. (with Hoffman and Wynder)
  - Tobacco Smoke on Indoor Atmosphere, The Influence of vii 440
- Schmidt, Alexander M.
  - FDA, The Drug Approval Process and the iv 237
- Scoville, William Beecher
  - Neurosurgeon's Response to the U.S. Mental Health Review of Psychosurgery iv 235
- Semeraro, Lucille (with Anthony)
  - Cardiac Care Unit: Analysis of Initial Data, A Mobile Emergency xii 797
- Shapiro, Bernard S. (with Hoffer)
  - Colonoscopy—Preliminary Review of Surgical Applications i 6
- Shenkin, Budd (with Warner)
  - Open Information and Medical Care: A Proposal for Reform i 33
- Simmons, Henry E.
  - Professional Standards Review Organizations and the Quality of Health Care vi 371
- Singer, Joel B.
  - Finger, Salvage of an Amputated Index, Utilizing Microsurgical Techniques vii 401
- Smith, Barbara (with Gelfman, Kranwinkel, Pezzimenti, Kotch and Dean)
  - Reye's Syndrome Treated by Hemodialysis vii 405
- Snyder, Herbert L. (with Heimann and Karns)
  - Xeromammography at a Community Hospital, A Year's Experience viii 465
- Southwick, Wayne O. (with Friedlaender, Johnson and Brand)
  - Fractures, Treatment of Pathological xii 765
- Spencer, Richard P. (with Puri)
  - Lung Scan, Repeated "Rapid Resolution" of Segmental Defect on Perfusion ii 86
- Spencer, Richard P. (with Witek and Banerji)
  - Nuclear Medicine Procedures, Evaluation of "Emergency" vii 409
- Spicker, Stuart F.
  - Xenodochium for Apollo in the Temple of Ascelpius, A.. i 35
- Starr, Gerald A. (with Webb, Jr.)
  - Connecticut Emergency Departments: Responsibility of Registered Nurses or Physicians, Patient Care Tasks in i 30
- Stern, Harold (with Toole)
  - Lung Cancer v 279
- Strauch, Gerald O.
  - Spleen, Should We Attempt To Salvage The Injured?.. ix 533
- Strauch, Gerald O. (with Bull)
  - Tracheal Reconstruction, Respiratory Failure After, A Hopeful Note iii 143
- Strauch, Gerald O. (with Carrillo)
  - Pancreaticocolic Fistula ix 530

T

- Tenret, Joseph
  - Chest Film Useful, Is a Systematic Annual? x 604
- Tibbles, Lance
  - Dead, Is He? Should He Be Allowed To Die? Who Decides? xi 731

- Todd, Malcolm C.
  - Professional Liability Problem iv 249
- Toole, Allan L. (with Stern)
  - Lung Cancer v 279

V

- Van Gilder, John C.
  - Breast Cancer, The Place of Hypophysectomy in the Management of Metastatic i 3
- Venes, Joan L. (with Rodgers)
  - Spina Bifida Center: Yale-New Haven Hospital, Introduction of the Pediatric Nurse Practitioner in a Program of Comprehensive Management xii 801
- Vietzke, Wesley M.
  - House Staff Training, Current Trends in ii 122

W

- Wagensteen, Owen H.
  - Surgeons and Wound Management: Historical Aspects ix 568
- Ware, John E., Jr. (with Naftulin and Donnelly)
  - Educational Seduction, Doctor Fox Lecture: A Paradigm of ix 559
- Warner, David C. (with Shenkin)
  - Open Information and Medical Care: A Proposal for Reform i 33
- Washington, John A. (with Wilson and Rosenblatt)
  - Anaerobic Bacteremia x 597
- Webb, Samuel B., Jr. (with Starr)
  - Connecticut Emergency Departments: Responsibility of Registered Nurses or Physicians, Patient Care Tasks in i 30
- Webb, Samuel B., Jr. (with Robson and Lanckton)
  - Quality Assurance Programs, A Monitoring Strategy for iv 253
- Webb, Samuel B., Jr. (with Robson and Lanckton)
  - Skull Fracture Patients: Minimum Standards and Physician's Performance, Emergency Department Testing of v 290
- Weissman, J. B. (with Gangarosa, DuPont, Nelson and Haltalin)
  - Shigellosis Therapy, Abstract by vii 413
- Welsh, Donald R. J.
  - Hernia Repair, Inguinal ii 74
- Wetstone, Howard J.
  - Primary Care Task Force—Interim Report x 623
- White, Edward R. (with Zimmerly)
  - PSROs—What Do They Mean To The Lawyer? xi 725
- White, Fred A. (with Poffenbarger)
  - Hypoglycemic Drug Therapy, Guidelines for the Use of Oral, The Balance of Risks Versus Benefits iii 137
- Wienckowski, Louis A. (with Brown and Bivens)
  - Psychosurgery: Perspective on a Current Issue iv 228
- Wiernik, Peter H.
  - Leukemia Patient, Management of the Acute xi 681
- Wilson, Walter R. (with Rosenblatt and Washington)
  - Anaerobic Bacteremia x 597
- Witek, Joseph T. (with Banerji and Spencer)
  - Nuclear Medicine Procedures, Evaluation of "Emergency" vii 409
- Wynder, E. L. (with Schmeltz and Hoffman)
  - Tobacco Smoke on Indoor Atmosphere, The Influence of vii 440

Y

- Yale, Irving
  - Podiatry and Medicine, The Interface Between vi 377
- Yesner, Raymond
  - Lung Cancer, The Importance of Pathology for Prognosis and Management in v 280
- Yoon, Ill Lyong
  - Chromosome Analysis in Clinical Medicine iii 145

Z

- Zimmer, Howard (with Kerstein and Dugdale)
  - Dressings, Rigid: Poor Results xi 690
- Zimmerly, James G. (with White)
  - PSROs—What Do They Mean To The Lawyer? xi 725
- Zurier, Robert B.
  - Rheumatoid Disease, An Overview vi 348

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